thetech.com

Volume 142, Number 29



WEATHER, p. 2 FRI: 44°F | 35°F Sunny. SAT: 40°F | 35°F Chance of showers.

Thursday, December 8, 2022

# YouTuber Mark Rober will be 2023 Commencement speaker

Rober, who creates science and engineering focused content, will speak at the OneMIT Ceremony Jun 1

By Wenbo Wu and Srinidhi Narayanan

Mark Rober, a former NASA engineer and science communicator best known for his YouTube channel, will speak at the 2023 OneMIT Commencement Ceremony June 1.

Rober has amassed a YouTube following of over 23 million subscribers with over 3 billion views as of press time. Some of his most popular videos include swimming in Jell-O, filling hot tubs with "liquid" sand, and a series of engineering videos on catching package thieves using a "glitter bomb" contraption.

"For millions of young learners (and a few older ones, too), Mark Rober is making science and engineering inspiring, engaging, accessible, and most importantly, fun," President L. Rafael Reif told MIT News. "His videos and build-box kits brim with creativity and energy hand-on learning at its finest."

Rober said to MIT News that he is "such a believer in hands-on, practical engineering solutions to realworld problems," and that he "can't think of a school that has a better reputation for that than MIT." Rober is "excited to come out and meet the Class of 2023 and celebrate all the amazing, positive change they're going to bring to the world."

Prior to starting his YouTube

career, Rober studied mechanical engineering at Brigham Young University (BS) and the University of Southern California (MS), spent nine years as a mechanical engineer at NASA's Jet Propulsion Laboratory, and five years on project design working at Apple.

Outside of making videos, Rober raises awareness for autism, a condition his son has. Rober also collaborates with Jimmy Donaldson, better known as MrBeast on YouTube, to fight climate change with initiatives like Team Trees, which has already planted over 20 million trees, and Team Seas, which has already removed over 30 million pounds of plastics from oceans, rivers, and beaches.

Senior Class President Anna Sun '23, Undergraduate Association President David Spicer '23, and **Graduate Student Council President** AJ Miller G underscored Rober's inclusive and accessible approach to

Sun said that "accurately described as the 'Willy Wonka of engineering,' Rober has an acumen for innovation and serves as an inspiration for redefining how we students can use our knowledge to impact those around us. I can't wait to learn more from his experiences."

Spicer stated that "bringing individuals from all walks of life into an educational environment is a

feature of MIT, and Mark Rober captures this MIT quality through outreach videos that spark imagination and innovation in the minds of learners across the globe."

Miller shared that he loves "how [Rober] makes building and communicating science fun and accessible to everyone and inspires so many young people to pursue education and careers in technology."

Spicer also pointed out that "Science and engineering are not static. Education is not stagnant. Rober is a fresh example of the importance of bringing the new generation of learners into STEM education through pioneering methods," while Miller added that "Mark Rober is a great exemplar of the quirky, creative energy for engineering we so highly and uniquely value at MIT, and I can't wait to hear him speak at Commencement.'

Recent Commencement speakers include director-general of the World Trade Organization Ngozi Okonjo-Iweala MCP '78 PhD '81 (2022), civil rights lawyer and activist Bryan Stevenson (2021) and retired Navy four-star admiral William McRaven (2020).

MIT's Commencement celebrations will take place over three days from May 31-June 2, 2023, unlike past years, which have featured two-day

Mark Rober, Page 2



Students gathered in Lobby 10 for the UA Crafts Market to purchase arts and crafts made by various MIT students, Sunday.



Speakers are interviewed on stage at the TEDxMIT event, Sun-

The MIT Logarhythms perform a cappella at their annual fall concert, Logs Got Talent, in Kresge Auditorium, Saturday.

#### **IN SHORT**

Winterfest 2022 is Dec. 8.

**Last day of classes** for fall term is

Final exam period for fall term is

Dec. 16-22.

Interested in joining The Tech? Email join@tech.mit.edu.

Send news and tips to news@tech.

# Brent Ryan and Anne White will assume role of associate provost

The associate provosts will work 'within the Office of the Provost to support the day-to-day operations' of the Institute

By Alex Tang and Eunice Zhang

ASSOCIATE NEWS EDITORS

Brent D. Ryan PhD '02 and Anne White assumed the role of MIT Associate Provost Nov. 18, Provost Cynthia Barnhart PhD '88 and Associate Vice President for Research Maria T. Zuber announced in an email to the MIT community. White was also appointed Associate Vice President for Research Administration.

Communications Director for the Office of the Provost Catherine Williams wrote that the associate provosts "work within the Office of the Provost to support the day-today operations of the Institute" in an email to The Tech.

Ryan, an associate professor of urban design and public policy, is currently head of the City Design and Development group in the Department of Urban Studies and Planning. Prior to joining MIT's faculty in 2009, Ryan held professorships at Harvard University and the University of Illinois at Chicago, and worked as a city planner and urban designer.

As associate provost, Ryan's primary responsibilities will be "long" and "short-term campus planning." He will oversee "supporting departments and units to serve student research-related activities at the local level."

White, a Distinguished Professor of Engineering, is currently head of the Department of Nuclear Science and Engineering. White has "served on several Institute-wide committees" and co-chairs MIT Climate Nucleus, a faculty committee responsible for managing and implementing Fast Forward: MIT's Climate Action Plan for the Decade according to the

As associate provost and Associate Vice President for Research Administration, White will oversee offices supporting "the administrative and financial functions of the research enterprise at MIT," including the "Research Administration Services, Research Administration Systems and Support..., Research Development, and the Office of Strategic Alliances and Technology Transfer."

Williams stated that the selection process for the associate provosts involved consultation lected academic council members; department, lab, and center heads; staff members leading and supporting MIT's research administration and space space management and campus planning functions." Williams added that "interested faculty and students" were able to voice

With Sally Kornbluth to assume MIT's presidency Jan. 1 2023, Williams said that the associate provosts will work in conjunction with Barnhart "to support Dr. Kornbluth's initiatives and priorities related to research administration and space management and campus planning."

#### **CAPTIVATING**

When actors do justice to their roles. ARTS, p. 3

#### **CRISIS**

MIT should address increased cost of living. OPINION, p. 4



#### **SHACKLES**

Visas are limiting my life. CAMPUS LIFE, p. 5

### **REALITY CHECK**

Topics of life and death. **CAMPUS LIFE, p. 6** 

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**WEATHER** 

# Approaching the end of the fall season

#### By Paige Yeung

Winter is approaching! Thursday and Friday will be sunny and clear, but a cold front is moving in this week and bringing colder temperatures with it. These colder temperatures are expected to arrive over the weekend, and there is a chance of rain on Saturday. Winter storms aren't here quite

yet, but make sure to bundle up and have winter supplies on hand as you brace for the end of the fall semester.

Meanwhile, in the rest of the U.S., northern California and the Pacific Northwest are expecting rain and snow from a cold front. The Midwest may experience thunderstorms as the winter season draws closer.

#### **Extended Forecast**

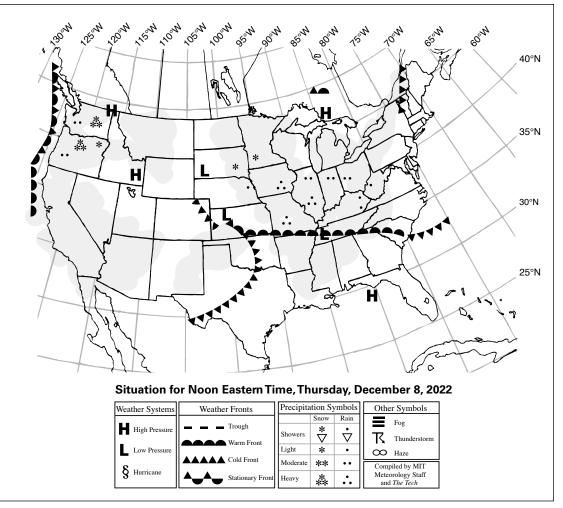
**Today**: Sunny. High around 50°F (10°C). Northwest winds around 14 mph, with gusts up to 25 mph.

**Tonight**: Mostly clear. Low around 33°F (1°C). Northwest winds around 11-14 mph.

**Tomorrow**: Sunny. High around 44°F (7°C). North wind around 11-14 mph, with gusts up to 25 mph.

Saturday: Mostly cloudy, with 20% chance of rain. High around 40°F (4°C). North wind 14-17 mph, with gusts up to 28 mph.

**Sunday:** Cloudy. High around 38°F (3°C). Northeast winds around 11-13 mph.



## Undergraduates will receive their diplomas on Killian Court on June 2

Mark Rober, from Page 1

ceremonies, Provost Cynthia Barnhart PhD '88 and Chancellor Melissa Nobles announced in email to the MIT community Dec. 7.

In addition to the OneMIT ceremony for all graduates, undergraduates will receive diplomas on Killian Court June 2. Programs,

schools, and the college will hold recognition ceremonies for advanced degree recipients between May 31 and June 2.

While this particular format is new, several aspects of past ceremonies remain: the OneMIT ceremony debuted at 2022 Commencement, following two years of virtual ceremonies.



Tracy Chang - Chef and Owner of Pagu - shows the technique behind noodle pulling at AAI speaker event, November 29th.



KATE LU—THE TECH

**Simmons Hall residents dance at the Dance and Mocktail Party** in honor of Simmons' 20th birthday, Friday.



A capella group Syncopasian performs at their fall "Syncommercial"-themed concert in 10-250, Sunday.

Have something to say?
Write **opinion** for *The Tech*!

opinion@tech.mit.edu



THURSDAY, DECEMBER 8, 2022 THE TECH 3

## A perfect blend of action and folklore rooted in **Indian culture**

An immersive, holistic cinematic experience that must be appreciated on the big screen

By Vyshnavi Vennelakanti STAFF WRITER

I walked into Apple Cinemas Cambridge having eagerly waited to watch Kantara, a feature that has been garnering attention in the Indian film industry. Following Kantara's success in its original language of Kannada, it was dubbed into four other Indian languages to make the movie available to a wider audience.

Kantara starts in the mid-1800s, where a king (Vinay Biddappa) finds that happiness eludes him despite having all of life's supposed necessities. In search of this happiness, he travels far and wide. He stops in a forest when he comes across a stone slab that embodies the essence of "Panjurli Daiva," the divine spirit of a wild boar. He feels immensely happy just by looking at it and negotiates with a shaman who is possessed by "Guliga," the guardian deity and a companion of "Panjurli," to lend a portion of his land to the locals in return for taking the "Panjurli" deity with him to his kingdom.

We then witness the Bhoot Kola performance, taking place after a few decades, which is a highly stylized dance ritual held in reverence to local deities. During Bhoot Kola, the king's successor asks the Bhoota Kola performer possessed by "Panjurli" for the villagers' lands to be handed over to him, to which the performer denies. At this, the king's successor raises doubts as to whether it is the deity or the performer in the guise of the deity talking to him. The performer promises to clear his doubts and runs into the forest to vanish in a blaze of flame! Thus, Kantara, which in Kannada translates to "a mystical forest," opens in the "Kantara" with the deity proving his

A few years later, Shiva (Rishab Shetty), son of the Bhoota Kola performer, has become a champion of Kambala, which is an annual buffalo race held in some parts of southern India. Shiva is at daggers drawn with the forest officer Muralidhar (Kishore), who is tasked with the job of converting the forest lands into a reserve. On the other hand, unbeknownst to Shiva, the seemingly kind village landlord Devendra (Achyuth Kumar), who is a descendant of the king's successor, is waiting to usurp the villagers' lands. The rest of Kantara shows how Shiva and the villagers settle their disputes with Muralidhar and protect their lands from Devendra, as well as the role of the Bhoota Kola tradition in this process.

We see Shiva as someone who is only interested in hunting, drinking, and gambling most of the time. He shows no inclination whatsoever towards taking part in the family tradition of performing in the Bhoota Kola, partly due to the trauma he experienced as a child when he witnessed his father vanish in a blaze of flames in the forest. However, he is extremely passionate about his village and goes to any extent to protect his land and people. This is evident in the fierce fury he demonstrates against Muralidhar, who tries to convert their lands into a forest reserve. While Muralidhar is right in his own way and only doing his duty, it takes quite a while for both Shiva and Muralidhar to understand each other's points of view.

The character arcs of Shiva and Muralidhar develop naturally. Shiva's actions are never glorified — he is instead castigated by his mother and villagers for his mistakes. Kantara takes him on a journey where he identifies his mistakes and becomes a bet-

Shetty does a fantastic job of portraying the traditions of Kambala and Bhoota Kola sensibly and respectfully in Kantara. While many are unaware of their existence, Kantara captures the spirit of these traditions and brings them to the masses. There is also a deeper meaning associated with Bhoota Kola and the characters in the film: the village (portrayed through Shiva), forest (portrayed through Muralidhar) and the deities ("Panjurli" and "Guliga" who possess the Bhoota Kola performers) are all interconnected. Kantara emphasizes that life is ultimately about maintaining a healthy balance and protecting one another.

Kantara is extremely suspenseful, which lighting effects effectively maintain in some of the sequences shot in the forest. There are several jump scares, but all of them feel very natural to the script of the film. Kantara takes us on a rollercoaster of emotions where we laugh at the hilarious situations involving Shiva and his friends, get scared just like Shiva in his nightmares, and are extremely emotional about the plight of the villagers. All the sequences in the movie culminate in an electrifying climax that stands out and will remain in memory for a very long time!

After watching the film, I can confidently say that there is no one better suited to play the role of Shiva than Rishab Shetty. \*\*\*\*

Kantara

**Directed by Rishab** Shetty

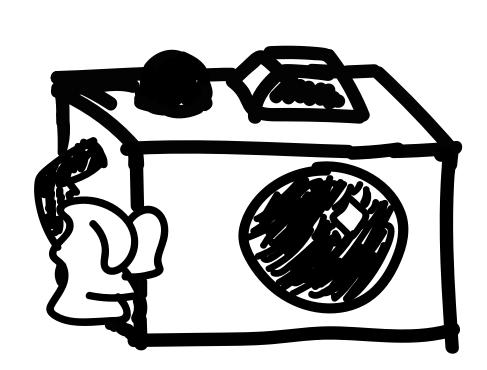
Rated 13+

Streaming on Amazon

All the actors in the movie do justice to their roles by bringing their characters to life onscreen and captivating the audience with their performances. Even actors without much screen time communicate impressively through their expressions alone.

Adding to the brilliant story and the terrific performances is the background score





# PHOTO WANTS YOU

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## Solution to Winter Break

#### 3 2 6 5 9 8 4 1 7 8 7 1 4 2 6 5 3 9 4 9 5 7 3 1 2 8 6 2 6 7 1 4 3 8 9 5 5 3 9 6 8 7 1 2 4 1 4 8 2 5 9 6 7 3 9 5 4 8 7 2 3 6 1 6 8 3 9 1 4 7 5 2 7 1 2 3 6 5 9 4 8

#### **Solution to Holidays**

5	7	6	2	8	9	1	4	3
1	3	9	4	7	5	6	8	2
8	4	2	1	6	3	9	5	7
9	8	4	7	2 5	6	3	1	5
3	6	7	8	5	1	4	2	9
2	1	5	3	9	4	7	6	8
7	2	1	6	3	8	5	9	4
4	9	8	5	1	7	2	3	6
6	5	3	9	4	2	8	7	1

#### Solution to Music







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#### **GUEST COLUMN**

A one-time payment can't address an ongoing crisis

Additional measures must be introduced to address the increasing cost of living

By Terra Cholfin and Jordan Silva

On Oct. 19, MIT's administration sent an email announcing a "special one-time payment" of \$1,500, pre-tax, for some eligible employees, which MIT will provide in response to concerns about inflation and the financial challenges it has posed. The payment is set to be included in December paychecks, but MIT has made no mention of any recurring bonuses in the future. As employees, we are grateful for the payment; however, a stand-alone bonus is not a long-term solution to the rising cost of living. MIT employees need real relief in the form of a cost-of-living adjustment to our salaries.

### Changes in the actual cost of living in Boston

Terra is a long-time employee of the Institute, and Jordan is a newer employee. Comparing situations at the beginning of our tenures at MIT is instructive. Using the CPI calculator at the Bureau of Labor Statistics web site [1], we looked at salary and cost of living increases. Comparing Terra's starting salary at MIT in 1990 and Jordan's in 2020, CPI-adjusted, Jordan's starting salary was similar.

However, over the last 32 years, many essential living expenses in this area have increased at a rate far exceeding overall inflation. In 1990, Terra was able to afford to share a four-bedroom Philly-style apartment in the Central Hill area of Somerville with four friends, with rent at \$1,250 per month (\$250 per person). According to the CPI calculator, that amount adjusts to \$2,784 (\$557 per person) in late-2022 dollars. The rent estimate on Zillow for that same apartment today is \$4,964 (\$993 per person, now listed as five bedrooms), an additional increase of 78% beyond inflation. That's in line with the price-per-bedroom cost for apartments in older (ostensibly more affordable) housing stock in the area today.

It's possible to find less expensive housing outside of the Boston metro area, but then it becomes necessary to take the commuter rail (\$90-\$426 for a monthly pass, which is only 60% subsidized by MIT, as

opposed to the monthly T pass, which is fully subsidized,) or drive. The inflation-adjusted price of the used car Terra bought in 1987 is \$5,165 in late-2022 dollars. A search of later-model used cars today shows that the prices of similar vehicles start at around \$10,000. For employees, the cost of parking on campus is capped at \$1,995, or about \$166 per month, and the average cost of gas has also risen faster than the rate of inflation, if only by a relatively modest 24%. Factor in the time spent commuting as well, and the savings from living outside the city are greatly reduced.

According to an October 2022 article in Money [2], overall inflation from October 2021 to October 2022 was 8.2%. Meanwhile, grocery prices are up 13% during that time period, and natural gas is up 33.1%. At the same time, we have expenses that are considered essential that simply did not exist 30 years ago, such as cell phones and home broadband service.

#### The impact on employees

The rising cost of living has required employees to make difficult decisions. Some have had to find second jobs to make sure their bills are paid. Some have felt like they need to leave MIT for a higher-paying role despite wanting to stay at the Institute. Until September 2022, Jordan lived in an unsanitary apartment covered in cat litter with three other roommates, two of whom she felt unsafe or uncomfortable around, because it was the only way she could afford paying rent while still saving money. The toll these living conditions had on her mental health was beyond what she had ever experienced. Despite this, she still second-guessed whether leaving to live in a safer, more sanitary environment would be feasible because her rent would double and eat into two years of savings.

MIT employees should not have to sacrifice our wellbeing or leave the jobs we love in order to get by. MIT is a resourceful institution capable of making a massive impact on the quality of our lives. Providing employees relief would also be mutually beneficial for MIT and those who work here. Employees would suffer less burnout and perform more efficiently if we weren't

constantly worried about finances, working extra hours at other jobs, or wishing we had the wiggle room to afford things that contribute to our wellbeing. We could focus more on the needs of our students if we were not so overwhelmed by our own needs. Employee retention would be greater if employees didn't feel like they had no other choice but to leave due to financial burdens. Without relief, other than the one-time payment, stress and tension will continue to grow.

#### Conclusion

MIT's annual merit raises have been holding steady in the vicinity of three percent for at least three decades. On average, this has been barely enough to keep pace with inflation, and certainly not enough to keep pace with the actual cost of living in the Boston metro. It is past time for MIT to start offering cost of living increases rather than just merit raises and address job performance as a separate issue. We know that MIT has financial resources available for this type of expenditure because MIT just gave a significant raise, on the order of up to 20%, to our Postdoctoral Associates starting Jan. 1, 2023, which the Institute will subsidize for the first year.

Working at MIT wasn't always so stressful, and it doesn't have to be this way now. To this end, the MIT Student Worker Alliance has put forth a petition calling for a six percent Cost-of-Living Adjustment increase for all employees, to begin to address our rapidly increasing cost of living. A full-time salary at MIT should be sufficient to support a person in a clean, safe, and hospitable home without their needing to subsidize it with one or more additional jobs. We should not need to spend a large proportion of our waking non-working hours commuting. We should be able to pay our bills while also having time and energy for our families, friends, interests, and public service. These things make us better workers and better people and are simply part of basic human dignity.

If you agree, we invite you to join us and over a thousand other members of our community in signing the petition [3].

#### Reference Links

- Bureau of Labor Statistics CPI calculator: https://www.bls.gov/data/inflation\_calculator.htm
- 2. "Prices for These 20 Items Are Rising Faster Than Overall Inflation" Money, October 13, 2022: https://money.com/items-prices-rising-faster-than-inflation/
- 3. MIT Student Worker Alliance Petition: http://tinyurl.com/MITinflationrelief

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THURSDAY, DECEMBER 8, 2022 THE TECH 5

## **Shackles**

"Will you now or in the future require a sponsorship?"



ARUN WONGPROMMOON—THE TECH

Too many abbreviations and too many restrictions but too little money and too little time to figure it all out before the time bomb explodes.

#### **By Arun Wongprommoon**

EDITOR

Well, FML for digging myself a hole that makes it nearly impossible to find a path towards a better life for myself.

Look, with the hiring freeze this year, I know applying for internships and jobs is harder for everyone. But the more I apply, the more I learn and read about job applications, and the more I get rejected, the more I realize: I'm not on equal footing.

Let me explain.

This story starts right at the end of summer, when my other story came to a close. Yes, after all my troubles obtaining a tourist visa, I was finally able to visit my brother in the U.K. and spend a week in Europe. I got my passport back merely three days before I was scheduled to leave Pittsburgh.

From then, however, everything seemed to go downhill.

If you thought my last article was complicated, that's just the tip of the iceberg.

On the last Wednesday of my summer internship, I had a final check-in with the

#### The more I apply, the more I learn and read about job applications, and the more I get rejected, the more I realize: I'm not on equal footing.

"I'm sorry to say that we will not be extending a return offer because of your complicated visa situations."

My life plans crumbled right then and there, and I crashed into panic. Over the summer I had formed a five year plan for myself given what I know about my visa and scholarship situation.

There is one common path international students can take if they want to continue living in the U.S. after their studies, into their career years and beyond. If you've heard of the green card, this is it.

The vast majority of international students here in the U.S. hold an F-1 student visa. It comes with Curricular Practical Training (CPT) during studies and an Optional Practical Training (OPT) period of about three years after the period of study.

Training is an umbrella term, which students would usually use for internships while they are in school and for starting a career after graduating. There are some guidelines here, but they boil down to the need to document and get approved for every kind of work you do in the U.S. outside of school, which needs to be directly related to the major or field of study. There's also this crazy thing where you can't do an internship if you've completed all of your course requirements, so you might have heard of or seen us internationals putting off one requirement until senior spring. This, folks, is strategy and survival in the cruel world of bureaucracy. F-1 students can also only work part-time — at most 20 hours a week – during the school year, whether they are on or off campus. That might be why you don't see many internationals taking up side jobs or straying off the beaten path.

Doing the documentation and requesting approval is about half as much chaos and fury as getting a tourist visa. Not bad, but still quite irritating. It takes maybe about half a month to a month of emailing, asking a few different people for things, and waiting around.

After graduation, there is an H1-B visa, a work visa, that one can obtain by sponrship of a company and through nual federal lottery that takes about 80,000 people. For the whole country. For the entire year. Many F-1 students try their luck for an H1-B visa, timing their application to be during their OPT period, so that they can stay in the country after their student visa runs out and transition to a work visa. I want to emphasize that this process is a lottery, and that there exist some unlucky people whose three or four tries for an H1-B come up unfruitful. Returning to their home country is their only option thereafter.

Finally, there are green cards, which are dream goals for people who intend to stay in the U.S. in the long run. Even given the current U.S. political climate, many still want to get the green card, as living conditions, wages, and prospects of social mobility would still be better than those in a lot of countries people come from. There are a few things to file during the process of getting a green card, in three long steps, which can ultimately take at least two to three years. Deep into the process, people will be put in "green card jail," where they are unable to travel outside the U.S. for a whole year or so. Green card jail might be brutal for some, especially those whose entire families are abroad and are venturing in

this strange land alone, but it is an extremely worthwhile tradeoff for the ultimate gift of being a permanent resident.

The typical path would therefore involve obtaining an F-1 as a student, then an H1-B during the start of a career, followed by a green card. That was what I envisioned myself doing as well, and as such I formed my five-year-plan around this path and the company I worked for during the summer. I really enjoyed the work and it really felt like my fit, work content-wise, culturally, philosophically, everything. For a while, I thought I was all set in life and nothing could set me down. My green card was

This article would end now if it weren't for the fact that I am an exceptional case.

Enter: J-1 and the two-year home country physical presence requirement.

#### For a while, I thought I was all set in life and nothing could set me down.

The Thai government ordered that I get a different kind of visa, a much rarer J-1. The name of J-1 is officially the Exchange Visitor visa, and the intended use case is, for example, for those who are studying abroad for a relatively short amount of time, kind of like some MIT students who are going to the UK or Switzerland for a semester. Not a lot of people would be on this visa for a whole

Up until fairly recently, I was led to believe that F-1 and J-1 are mostly the same. F-1 has CPT and OPT; J-1 has a combined Academic Training (AT), albeit set at 18 months instead of three years. The Biden administration is piloting extending AT to three years for people in STEM, but it seems that the process to extend AT is heavily backlogged.

I was telling my story to a friend at my internship over dinner one day, and the friend joked: "Ah, yes, they're basically the same thing, that's why they're named differently."

Yeah, so true bestie. As it turns out, some J-1 visas have the Two Year Home Country Physical Presence Requirement (two-year rule, for short), which dictates that students have to return to their home country for two years after their period of study ends.

Shackles, Page 6



## Are you a tetris ninja?

Use your powers for good!



### ...by joining the production department at The Tech!

join@tech.mit.edu



(And get reimbursed for your meal!)

#### Shackles, from Page 5

The Thai government had outsmarted me — they knew the F-1 would make people disappear, so they made sure to chain us

Two years means missing out on hundreds of thousands of dollars. Money is the least of my worries, but who doesn't love the opportunity to obtain more money when available? To help out my parents, whose financial situations are dire. To build up a comfortable life.

Two years mean a discontinuity in social mobility or career growth. I can't get as far if I were to go home and work there for a while. It basically guarantees a "Please explain this gap in your resume."

Two years mean an exponential increase in difficulty of applying to come to the U.S. again, since you're no longer able to come as a student and have to play with the work

Two years mean disappearing off the social scene that I have built up over the past four years. Trust me, when I was home during the COVID-19 pandemic, it was not fun to wake up to my peers going to sleep, and get to sleep as my peers were waking up. It's really hard to communicate and keep in touch with people if you're quite literally as far away as one could be in the world.

The two-year rule also prohibits me from ever applying for an H1-B or a green card, cutting me out from that common path.

But is there a way to waive the two-year

Thinking about this is like trying every way to buy time on a ticking time bomb. Right now, the timer stands at 12 months. After that, boom — time to get deported and head home. I need to act fast if I want to ex-

As I've come to discover rather recently, the Thai government scholarship can function as a Thai government loan. Going with their playbook, I go back after my studies and retribute my scholarship by paying back with time - six years working in a government-affiliated organization in Thailand for six years in the U.S. Another option, which is more popular among those who don't play by the book, is that I can pay back with money. The government has been keeping tabs on how much they have invested in me since the very first flight out of Thailand. However much they paid for us is how much I have to pay back to them to clear the two-year rule. There is no interest if the sum is paid within 30 days. The sum? About four hundred thousand dollars, give or take. If you don't pay within a month, get ready for a 15% per year interest rate. Only when I finish paying would I be able to obtain a two-year

Yes, yes. To add time to the ticking time bomb I just have to give a small sum of 0.4 million dollars.

Should I get a loan to pay a loan? Is this a mortgage? College loan?

Can I ask for retroactive financial aid and make the Thai government unpay MIT tuition since freshman year?

Is there anyone who knows a kind billionaire who can let me borrow just a tiny bit of money — only about 0.0002% of Jeff Bezos' net worth?

Should I put all my savings into Bitcoin and expect a miracle to happen?

I know the answer to the last question, don't worry.

It is yes, yes I should.

Because there's no fucking way the other options would work, and so what seems to be a crazy idea isn't quite so crazy anymore, is it?

The thing about holding a J-1 is that companies also see the ticking time bomb chained to me, and most are hesitant to give me a chance. It's like I'm not a worthwhile investment to these companies.

It is already hard for F-1s to obtain an internship or full time jobs in this country, let alone in this economy. However, there are a number of companies who do sponsor F-1 visas but disgustingly shove J-1s away.

Looking at you, Meta, Stripe, and Spotify, to name a few. These companies will ask you if you have ever held a J-1, and all chances of receiving an offer from them vanishishes instantly.

This makes it harder for me to approach the hiring process selectively. I don't have the option to be selective.

And given that the only way to waive the two-year rule is to throw away money, I am persuaded to apply to jobs that have high compensation, even if the company does something that goes against my ideals.

Shackles, everywhere I go.

While I'm trying to live the best senior year and have fun with it, I can't bring myself to, because every once in a while this black hole of thought that I usually keep in the back of my mind resurfaces.

Because there's no fucking way the other options would work, and so what seems to be a crazy idea isn't quite so crazy anymore, is it?

And I actually can't live the best senior year that I want to either. I have been looking forward to a senior trip for a while, but after reading up on J-1 expiry and restrictions, I realize that my senior trip dreams are shattered. I, among other people on a J-1 visa, am simply not able to join my friends on something as normal as a weeklong trip abroad after graduation.

The expiry date for my visa is June 2, 2023 literally the day of commencement. This means I have to leave the U.S., and while the government has a 30-day grace period for me to pack up my life, I can no longer enter the U.S. with an expired visa. It's only oneway from here, no other option.

Extend the visa, you might say? On what grounds, if I am technically done with my bachelor's degree duties here? This is no tourist visa, and MIT would need to approve my seemingly needless request for visa extension. I can change to another visa for my master's degree, yes,, but that will not work out seamlessly since I have to be in the U.S. on J-1 visa status during my upcoming summer internship. In other words, I'm stuck in the U.S. and can't go home, or else the internship explodes.

Why can't I ever win with visas?

There are times when I wish a time machine existed. I would go back in time, not take this scholarship, and apply to MIT directly. It could have been a much better situation where I'm not shackled by the Thai government to such a restrictive visa. Go back in time, ask for financial aid the day I got admitted to MIT. Props to those who brainwashed me into thinking that international students cannot apply for financial aid, only for me to realize later that it was a glaring lie to keep me from having the upper

(Note: it is still a common misconception that international students cannot ask for financial aid. Let this be something to assure that yes, we can get aid, and do so now if you are not on aid. I wish Student Financial Services publicized itself more to internationals.)

But a time machine does not exist. The only way I can deal with this is to go forward.

Send help.

# Walking the Boston Marathon for cancer research

An experience worth remembering

By Vivian Hir

At 6 a.m. on Oct. 2, instead of asleep in my cozy bed, I was getting off the shuttle and walking to the official Boston Marathon starting line in the sleepy town of Hopkinton. The sun wasn't out yet, and the wind blew so strongly that my hair covered my face. Besides the streetlamps in the park and on the street, the surroundings were dark. Along with many others, I was participating in the Boston Marathon Jimmy Fund Walk, an event that raises money for cancer research at the Dana Farber Cancer Institute, Little did I know at the time that this experience would be one of the most unique and memorable experiences of my entire life.

This was the day I had been waiting for ever since I signed up for the fundraiser back in May. All of the work I put into training for the marathon walk over the entire summer culminated in this one event. While the walk wasn't designed to be a race or anything, I was still a little anxious. Despite having successfully walked long distances exceeding 15 miles, I was worried I would suffer leg and foot injuries by the end of the route. But now wasn't the time for negative thoughts.

In the beginning, I walked with Teresa and r friend Crystal, some people that I briefly chatted with on the shuttle to Hopkinton. But I quickly outpaced them and ended up approaching a group of four guys after a mile or two. All of them wore a shirt with a zebra logo that had the words "Brothers for Bryce" underneath. Although the majority of people in the walk kept to themselves or talked with their team members, I decided that making small talk with some strangers couldn't hurt.

After I broke the ice and began chatting with them, I learned that the team leader, Ryan, brought his good friends along to help fundraise money for his seven-year-old nephew Bryce, a kid with a rare immunodeficiency disorder. Although the Jimmy Fund Walk's primary focus is to raise money for cancer research, Bryce was a special case as he received bone marrow treatment at the Dana Farber Cancer Institute. It was the first time I met someone who had close relatives with this rare disease. Wanting to gain more perspective, I asked Ryan what Bryce's life was like.

"How does he attend school if he's in the hospital?"

"Unfortunately, he doesn't go to school and has a tutor in the hospital."

"How long has his life been like this?"

"He's been living like this for most of his

Hearing this sentence felt so jarring. Experiences commonly associated with childhood, such as having fun in the outdoors and recess in elementary school, aren't a reality for kids like Bryce. It was at that moment I realized how much I took simple things for granted, whether it was my physical health or my family's general well-being. What alarmed me was how most of us, myself included, don't know much about the lives of children suffering from diseases like cancer as they are tucked away in hospital

I walked with Ryan and his friends from Ashland to Natick. The first half of the Boston Marathon route wasn't that scenic, as I primarily passed through suburban towns. Despite the lack of scenery, I didn't mind walking past some strip malls or residential neighborhoods. Even small quirks of each town were memorable, whether it was the unusual number of clock towers in Ashland or the yellow sign that said "CHILDREN" in all caps in Framingham.

**Experiences commonly** associated with childhood, such as having fun in the outdoors and recess in elementary school, aren't a reality for kids like Bryce.

When Ryan's group decided to stop by a local bakery in Natick, I said goodbye and continued walking. From Natick to Wellesley, I mostly kept to myself. During this part of the marathon walk, I wondered how I would entertain myself for the rest of the journey if I had no one to talk to and there wasn't much to see on the way to Boston. Sure, I went on long walks during the summer, but none were as long as this one. Based on my 20-minute mile pace, the whole journey would take me more than eight hours to complete. Would boredom drive me to insanity? I initially thought I would listen to the This American Life episodes I downloaded, but I decided to not use my phone throughout the journey besides taking a couple of pictures.



(Top) The last stretch of the Boston Marathon on Boylston St.

VIVIAN HIR—THE TECH

#### Marathon, from Page 6

In retrospect, it was refreshing to avoid the noise and clutter of digital technology — to not do anything but walk. To my surprise, the long walk didn't feel that mundane. There were a couple of times I tried to occupy my thoughts with something, but overall I allowed my mind to simply wander and observe my surroundings, a state of mind that I rarely experience on campus.

As I walked, I entered this state of being present, a sensation I wish I experienced more regularly. I stopped thinking about what was going to happen in the upcoming week — next problem set deadline, next midterm date, next meeting appointment. The goal now was to focus on making each upcoming mile and reaching the finish line. I simply paid attention to the road ahead of me and made observations of each place I walked past, from the amusingly-named Big Boi Meat Market to a cute window display of the Boston Marathon mile 10 marker.

Although Boston felt far away, it was still nice to reach the markers stationed every half-mile. Each marker sign featured a picture and quote from a patient. Although there were patients of all ages, most were children. It was touching to read their words of appreciation for the Jimmy Fund and the Dana-Farber Cancer Institute. Despite how much pain they had to go through from treatment, their faces beamed with joy and some shared their aspirations and goals for the future. Taking time to pause and learn about these Jimmy Fund Walk heroes gave the fundraiser a more human touch, as I had a better understanding of how the money I raised was going to help people like them.

After walking through Natick, I was delighted to see the town of Wellesley sign and a change in scenery. I was getting close to mile 13 in the heart of Wellesley. There were lush, green trees right next to the road and the pond was crystal clear. Some cars whizzed by, but overall the road was quiet. The tranquil, peaceful setting was perfect for solitude. Having not much to do, I attempted to sing some songs from my childhood, such as "Hey Soul Sister."

Up until mile 13, my legs were fine and I didn't feel any pain. I predicted that my legs and feet would start to feel pain around mile 20, but unfortunately the pain started much earlier. Once I passed the halfway marker and entered Wellesley Square, I decided to sit down on a bench and change my pair of socks. As I raised my left leg to put on my new socks, a sudden surge of pain went through

my entire leg. I'm not sure what caused this to happen, but it felt like I pulled a muscle.

I was surprised that this was already happening around mile 14. While I did follow the recommended training schedule in the summer, I ran half of the distance and walked the other half. As a result, I didn't take into account how walking causes more time to be spent on each foot compared to running. I winced and waited for a minute or two to let the pain subside. I hoped that things would get somewhat better after that incident, but I started to feel foot pain that ended up persisting for the rest of the journey, and my feet swelled to the point that I wished my shoes could grow an extra inch or two. I wondered how I was going to keep walking like this for 12 more miles.

For the latter half of the walk, I walked gingerly, as each step felt robotic. My feet felt like they were on fire from the constant friction with my shoes. Each mile felt longer than the one before, and I couldn't wait to see the town sign for Newton. While the pleasant landscape of each town along with the novelty of walking the Boston Marathon route distracted me from thinking too much about the physical pain, I started questioning why I even signed up for this in the first place. Did I forget from reading online articles that I was probably going to get blisters and not be able to walk for a couple of days?

My feet felt like they were on fire from the constant friction with my shoes. Each mile felt longer than the one before... But I told myself to think about kids like Bryce.

But I told myself to think about kids like Bryce. The physical pain they experienced from hospitalization and chemotherapy was beyond my comprehension. Despite these challenges, they were grateful and happy for many things in their lives, like their families and patient care teams. I then thought about the people who walked in memory of loved ones that passed away from cancer; the emotional pain that came from mourning and grieving was magnitudes more than what I was feeling.

I had no good reason to complain: the pain I experienced from this walk was nothing compared to that which patients and their loved ones experienced. In my case, there were four more hours to go and the post-walk pain would last at most two or three days. For many others, however, the pain they underwent was an ongoing or long-term process. I also thought about other participants who have done this fundraiser for many years to walk the same journey again and again, as well as walkers who were much older than me. Inspired by the people around me and the patients I learned about from the mile markers, I decided that the pain was worth it and kept going. I couldn't give up on my fundraising pledge.

As with previous towns,, the walk in the town of Newton took a long time. I expected Heartbreak Hill to be very steep and daunting, but it turned out to be more approachable given that I was walking the whole thing. After passing by many houses on Commonwealth Avenue, I finally reached Boston College in Chestnut Hill. I couldn't believe that I was getting close to Boston. Sure, I was still far from Boylston Street, but now I felt like the goal was within my grasp.

I remember the last hour as a series of vignettes that when compiled together, feel like a time-lapse. I processed time like a clock counting down to 0. I couldn't believe that there was only an hour left when I entered Boston's Brighton district. After a brief time there, I walked along the Green Line in Brookline and checked my watch. There were 40 minutes to go. Yes, I still felt foot pain, but happiness began to overtake me. Reaching the finish line that once felt so far out of my reach now felt possible.

My surroundings didn't become familiar until I saw the iconic Citgo sign near Fenway Park. In 20 minutes, my whole experience would be over. I was only a mile away from the finish line. What was 20 minutes became 15, then 10 as I passed by Fenway-Kenmore and entered Back Bay. At mile 26 on Boylston Street, I started walking faster so that I could reach the end and relax for once. After walking the last 0.2 miles, I finally crossed the finish line in Copley Square and completed the 2022 Boston Marathon Jimmy Fund Walk.

When I reached the finish line, my legs were exhausted. At the same time, I was so proud that I did something that I had thought was impossible not too long ago. Participating in the Jimmy Fund marathon walk taught me so many lessons. Meeting people from various backgrounds along the way provided me with a greater understand-

ing of the unfortunate realities that many cancer patients have to face on a day-to-day basis. Not only that, but talking to people from various backgrounds along the way was also moving, as they were all determined to help in any shape or form with battling cancer.

Why did they have to be subjected to so much pain and have their childhood taken away from them? Why was life so unfair to them? Why did they have to consider the possibility of death or a shorter lifespan at such a young age?

I thought that my thoughts would quickly revert to matters related to school when I returned to my dorm, but I still thought about all the lessons I learned from the Jimmy Fund marathon walk. Wanting to know more about the children featured on the mile markers, I decided to go on the fund's website. As I read quotes about their passions and saw their angelic faces, tears welled up in my eyes. Initially, the rational side of me didn't understand why I wanted to cry for people I never knew personally or met in real life, but the recurring question of "why" kept ringing through my head. Why did they have to be subjected to so much pain and have their childhood taken away from them? Why was life so unfair to them? Why did they have to consider the possibility of death or a shorter lifespan at such a young age? Topics I rarely thought about such as life and death never felt so close until now.

Yet, amid the despair I felt at the moment, I thought about how strong and resilient these patients were as they underwent many rounds of cancer treatment. Instead of feeling even more hopeless, I left feeling inspired by their stories. While the things I saw along the Boston Marathon route and particular conversations I had with others may fade, I will never forget how the walk changed my outlook on confronting life's challenges with hope and optimism and taught me about the strength and resilience of those who do so every day.



### Winter Break

Solution, page 3

	2	6	5				1	
		1			6			9
4			7				8	
		7	1	4			9	5
1	4			5	9	6		
	5				2			1
6			9			7		
	1				5	9	4	

Instructions: Fill in the grid so that each column, row, and 3 by 3 grid contains exactly one of each of the digits 1 through 9.

## **Happy Holidays**

			2				4	
1	3						8	
8				6	3	9		7
		4			6			5
		7	8		1	4		
2			3			7		
7		1	6	3				4
	9						3	6
	5				2			

Instructions: Fill in the grid so that each column, row, and 3 by 3 grid contains exactly one of each of the digits 1 through 9.

## Face the Music by Lloyd Morgan

Solution, page 3

#### **ACROSS**

- 1 Video game pioneer 6 Ship's skipper, for short
- 10 Woes
- 14 Gives a darn
- 15 Share a border with
- 16 Trevor of The Daily Show
- 17 Do what's especially appropriate
- 20 Otherwise
- 21 Sees the point of
- 22 Smartened (up)
- 23 Guru
- 25 Roadside restaurants
- 26 Was sold very cheaply
- 31 Nautical "Halt!"
- 32 Pair of people
- 33 Demonstrate
- 37 Cup's edge
- 38 "Now listen . . ." 42 December 24 or 31
- 43 Defendant's statement
- 45 Needless fuss
- 46 Concur
- 48 Affected someone

- emotionally
- 52 Interrupts, on a dance floor 55 Tunnel's sound effect
- 56 Very pale
- 57 Attention-getting sound
- 59 Minor mistake
- 63 Started acting differently
- 66 Campground shelter
- 67 Hunter's garb, for short
- 68 Long-necked marsh bird
- 69 Annoys
- 70 Prophetic sign
- 71 Blissful places

#### **DOWN**

- 1 Muscle soreness
- 2 Back of a comet
- 3 \_\_ and crafts
- 4 Makeup exams
- 5 Suffix meaning "sort of" 6 Line of work
- 7 Slightly
- 8 Dogs with flat faces
- 9 Utmost degree
- 10 Baseball game segments

- 11 Not at all tight
- 12 In a little while
- 13 Storage buildings 18 Toaster waffle brand
- 19 Exact double
- 24 Matinee times: Abbr.
- 25 Place for a keyhole
- 26 Twist out of shape
- 27 Wicked
- 28 Phone directory listing
- 29 Committee descriptor
- 30 Take legal action
- 34 Guy getting a medal
- 35 Higher than
- 36 Unwanted garden growth
- 39 Deserve to receive
- 40 End of a university URL
- 41 Apiece
- 44 Gives approval
- 47 Wrote uncredited for another
- 49 Little bell's sound
- 50 Enthusiastic about
- 51 Highest point 52 Spiny desert plants
- 53 Theater worker 54 Express gratitude to

23 24

48 49

26 | 27 | 28

43

63

66

- 57 The first person
- 58 Where you live 60 Angler's gadget
- 38 39 40 46 47 59 60 61 62 68 61 Close \_\_ (approach)

62 Signing ceremony

64 Earth-friendly prefix

65 What to call a spaceship

souvenirs

10 11 12 13

33 34 35 36

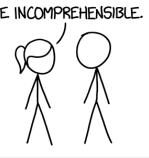
### [2707] Astronomy Numbers



...AND WE NEED TO CORRECT FOR OUR ELLIPTICAL ORBIT. ON JANUARY 19, EARTH WILL BE APPROACHING THE SUN AT A RATE OF...LET'S SEE ... 65 MILES PER HOUR. WEIRD. OKAY. WEIRD?



I GET SUSPICIOUS WHENEVER I SEE A NORMAL NUMBER IN ASTRONOMY. WE'RE NOT SUPPOSED TO HAVE THOSE. FEELS WRONG. SCALES SHOULD ALL BE INCOMPREHENSIBLE.



EARLIER, AT THE VET: YOUR CAT WEIGHS 12 LBS. RIDICULOUS, NOTHING WEIGHS 12". YOU MUST MEAN 10-20? OR 1040? FINE. YOUR CAT WEIGHS 3×10<sup>-30</sup> SOLAR MASSES. OKAY, BETTER.