



KEVIN LY—THE TECH

After several months of preparation, Next Act premieres *Beauty and the Beast* Thursday night in Next House. Performances will continue to run tonight and Saturday night.

Elango, Green on their UA platform

Initiatives include free tuition and institutionalizing transparency

By Jessica Shi and
Soomin Chun

EDITORS

This year's Undergraduate Association elections are underway. The Tech sat down to talk with candidates Mahi Elango '20 and Kelvin Green II '21, who are running for UA president and vice president, respectively, to discuss their platform.

Voting will open April 15 and close April 19.

The Tech: Why are you running?

Elango: Now is truly the time for student voices to be elevated and to be unified. I believe that based on our collective experience and our vision for MIT from the very first day that we came here — empowering each and every student to voice their opinions and to know

that they are being heard — can only be best achieved through the Undergraduate Association. I am running for president because I want to lead the UA and MIT in that direction.

I also see this big dream. This place is full of magic, and craziness. It is such a unique place, and there is so much potential for students to further change what MIT is and will be known for.

Green: Mahi reached out to me to run alongside her as the vice presidential candidate, and the reason I chose to run was that we had a shared vision for the future of MIT and for the welfare of the undergraduate student population. As a team, I believe that we

UA, Page 11

MIT announces new process for 'elevated-risk' proposals

Results of enhanced review include cutting ties with Chinese telecom companies Huawei, ZTE

By Whitney Zhang

NEWS EDITOR

Vice President for Research Maria Zuber and Associate Provost Richard Lester PhD '80 released a letter announcing a new review process for "elevated-risk" international proposals. The new process includes potential review by the Senior Risk Group (SRG), a new body whose focus is risk evaluation.

As of now, "elevated-risk" international proposals are all projects that are funded by, involve work in, or collaborate with those in China (including Hong Kong), Russia, and Saudi Arabia, but the list of countries is subject to change. In an interview with *The Tech*, Zuber said that the process applies to institutional-scale agreements, where several researchers may be involved, but not smaller projects.

As a result of this new review process, MIT has decided it will not accept new engagements or renew existing engagements with Chinese telecom companies Huawei or ZTE "due to federal investigations regarding violations of sanction restrictions," according to the letter. Existing engagements will be allowed to continue.

Huawei and ZTE have been recently under federal scrutiny over national security concerns. Meng Wanzhou, Huawei's chief financial officer, was arrested by the U.S. in December for violating sanctions against Iran. The U.S. forced ZTE to stop business in the U.S. between April and July last year after it violated sanctions against Iran and North Korea; it was allowed to resume after paying \$1.4 billion in penalties.

MIT currently has fewer than five engagements with Huawei and none

with ZTE, according to Zuber. Engagements are generally two to three years long, though some are longer. Zuber said that she has urged Huawei officials to cooperate with U.S. officials and if matters are resolved, MIT would be willing to reevaluate engagements with them.

"We're disappointed by MIT's decision, but we understand the pressure they're under at the moment," Huawei said on Thursday.

The first phases of the proposal review process have not changed. First, the International Coordinating Committee (ICC) conducts a compliance review, which involves the evaluation of project areas such as finance, law, tax, export control and operations. Then, the ICC either approves the project or refers it to the associate provost for international activities. Under the recommendation of the associate provost,

the project may undergo academic review by the International Advisory Committee (IAC), which evaluates if the proposed engagement "effectively advance[s] MIT's core academic mission of education, research and service."

Under the new process, the Associate Provost may additionally refer the project to undergo Project Risk Review by the SRG. The SRG is composed of the associate provost, the vice president for research, and the vice president and general counsel. The SRG will either approve the project with a risk management plan or prevent the project from proceeding.

Throughout the process, "special attention will be paid to risks related to intellectual property, export controls, data security and access, economic competitiveness, national security, and political,

civil and human rights," according to the letter.

China, Russia, and Saudi Arabia are the countries of focus for this new process, since they "represent some risk to the institution and risk to the individuals who are potentially involved in these collaborations," according to Zuber. She said that while other countries, such as North Korea or Syria, are also risky they are not countries with whom MIT currently collaborates.

Zuber said the process is meant to manage risk and provide "well-grounded processes to let our researchers feel comfortable and provide them some cover in case anything goes wrong" by setting "conditions for which our researchers can interact profitably with other researchers," rather than prevent re-

Review Process, Page 2

TechMart to be under Bon Appetit

TechMart will be under Bon Appetit next year, said MIT Dining Director Mark Hayes at the DormCon meeting April 4. The number of types of products at TechMart will be doubled and there will be fewer restrictions on types of products. There will be an additional fridge, freezer, and cage shelf. TechMart will still have products sold at-cost, Hayes said.

A group of students and staff will examine ways to improve the food variety and quality in

the Student Center, Hayes wrote in a statement emailed to *The Tech*. "Additionally, the Division of Student Life will create an advisory group that will consider house and retail dining at MIT in a more holistic way. That group will be developed over the summer and will launch this fall," Hayes wrote.

Vendors in the Student Center, including Anna's Taqueria, will be renovated and move lo-

Stud, Page 3

IN SHORT

CPW is ongoing until April 14.

Ring Delivery is on April 16.

There are no classes on April 15 and 16 due to Institute holidays.

Drop date is April 25.

Interested in joining *The Tech*? Stop by for dinner Sunday at 6 p.m. or email join@tech.mit.edu

Send news and tips to news@tech.mit.edu.



KEVIN LY—THE TECH

Students admitted to the MIT Class of 2023 arrive on campus Thursday for Campus Preview Weekend.

POSTDOCS AND SEXUAL HARASSMENT

Are postdocs' voices heard? **OPINION**, p. 5

GRACE FIELD HOUSE

One happy family in one happy orphanage. **ARTS**, p. 8

HUMANS OF MIT

Spotlight on Tarun Kamath. **CAMPUS LIFE**, p. 7



FIRST IMAGES OF BLACK HOLE

Researchers reveal first direct images of supermassive black hole. **SCIENCE**, p. 6

WELCOME PREFROSH

The Tech interviews the Class of 2023 for their thoughts on MIT. **CAMPUS LIFE**, p. 7

SECTIONS

Opinion 4
Science 6
Campus Life 7
Arts 8
Fun Pages 9

WEATHER

Narrow victory for the CPW Weather Machine

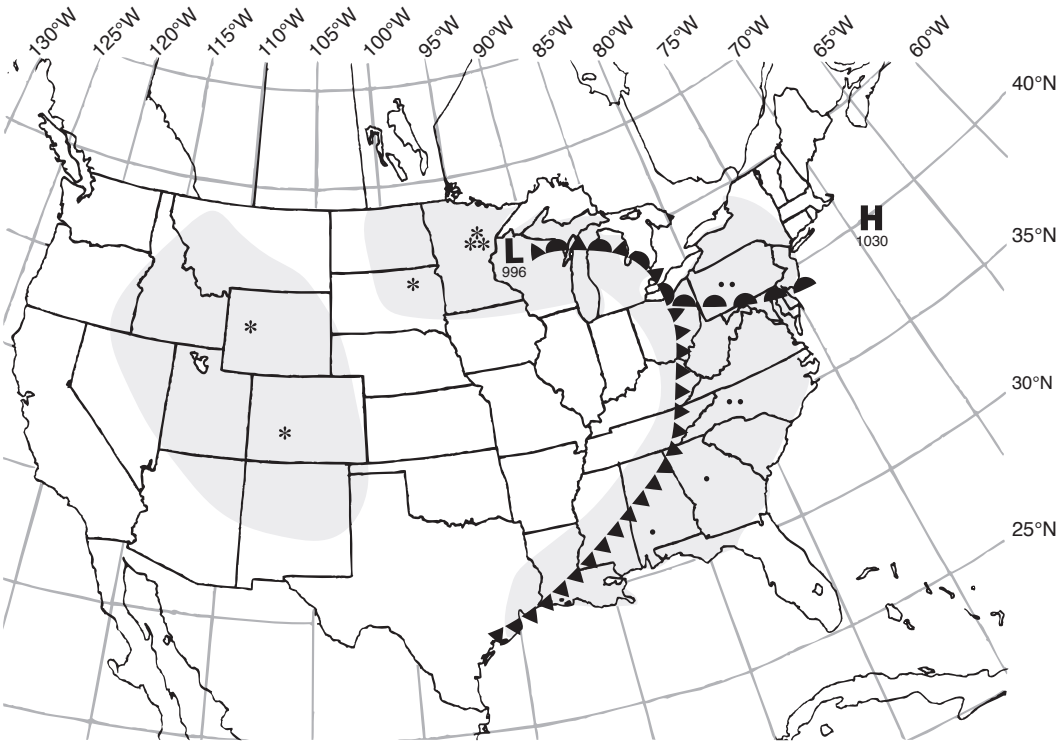
By Jordan Benjamin
STAFF METEOROLOGIST

It's a close call, but it looks like CPW will narrowly avoid significant weather troubles. Today, we enjoy fairly seasonable temperatures with highs in the upper 50s and mostly cloudy skies as a low pressure system approaches from the west. This system, the remnant of a strong plains cyclone that brought blizzard conditions to much of the Mountain West and High Plains, will drag a weak cold front near the Boston area overnight Friday bringing scattered rain showers. Luckily by Saturday morning the rain should

clear, giving way to a warm, partly cloudy day with high temperatures in the mid 70s *F! Sunday should be similar but slightly cooler, as yet another low pressure system approaches from the west. That system could bring extensive severe weather and thunderstorms to the Deep South over the weekend before moving northeast and bringing widespread rain to New England on Marathon Monday. Overall, things appear to line up for a great CPW so get out and enjoy it, particularly Saturday. But marathon runners and enthusiasts should prepare for a rehash of last year's cool, soggy slog through the city.

Extended Forecast

Today: Mostly cloudy. High around 55°F (13°C). South winds at around 10 mph.
Tonight: Showers likely. Low around 50°F (10°C). Winds south at 10-15 mph.
Tomorrow: Partly Cloudy. High around 73°F (23°C). Low around 53°F (12°C). Winds southwest at 10-15 mph.
Saturday: Partly cloudy. High around 65°F (18°C). Low around 50°F (10°C).
Sunday: Rain likely. High around 63°F (17°C).



Situation for Noon Eastern Time, Friday, April 12, 2019

Weather Systems	Weather Fronts	Precipitation Symbols		Other Symbols
		Snow	Rain	
H High Pressure	- - - Trough	* (snowflake)	∇ (inverted triangle)	☁ Fog
L Low Pressure	⌒ Warm Front	* (snowflake)	• (dot)	⚡ Thunderstorm
§ Hurricane	▲▲▲ Cold Front	** (two snowflakes)	•• (two dots)	∞ Haze
	⌒ Stationary Front	*** (three snowflakes)	••• (three dots)	

Compiled by MIT Meteorology Staff and The Tech

Sal Khan '98 encourages students to pursue passion projects

Khan emphasizes importance of developing portfolio of work and accomplishments

By Zoe Anderson
ASSOCIATE NEWS EDITOR

Sal Khan '98, founder and CEO of Khan Academy, spoke at the fifth annual Brazil Conference at Harvard and MIT April 5-6. *The Tech* interviewed Khan March 29 to discuss education, MIT, and Khan Academy. Khan advised students who have found their passion project to “run with it.” For students who have not yet found such a project, Khan advised them to try to find experiences where they can develop skills, both during college and in full-time employment. “Always be fiddling with things,” he said. Khan said that MIT is a “very rigorous place” where it can be

hard to pursue side projects or entrepreneurial undertakings, but also a place abounding with opportunities. He said that he learned a lot from the people around him at MIT, but that after graduation, those people dispersed. Khan said that college students should be learning by working with each other and building things, rather than through traditional lectures. “You take all of these really motivated, bright, young people, and they’re all on campus together ... and then you spend most of your time in these 200-person lecture halls taking notes and trying to stay awake, and that’s a horrible use of everyone’s time,” Khan said. He said that he often found it more productive to

read a textbook than to attend a lecture. Khan said that college students should learn at their own pace with online tools, such as edX and Khan Academy. Khan said that he thought college education would be improved if students spent more of their time working on projects that would go into their portfolios. A student’s portfolio would be a documented collection of their work and accomplishments. For example, a student might work on solving the lack of access to clean water. The student might go to a few seminars about the chemistry of desalination and get involved with a graduate student working on the same problem, but

would spend most of their time working on the problem. Khan said that he thought that assessing candidates’ portfolios would be more effective and efficient than conducting interviews. He said that application processes could be improved by having candidates conduct a single rigorous, recorded interview in which they answer common questions. The applicant could take as many tries on that interview as they needed. This would save both companies and applicants a tremendous amount of time, Khan said. Currently, a job applicant answers many of the same or similar questions during multiple rounds of interviews at several companies, and a company puts many candidates

through as many as four or five rounds of interviews for one opening. Interviews can also produce inconsistent results if a candidate simply has a bad day or an interviewer’s perception of a candidate is affected by implicit bias, Khan said. Khan said he envisions that in the next 10 years, or ideally in the next three to five years, Khan Academy will provide learners with bridges and credentials they can use to access internships, jobs, and higher education. Khan said that he felt that a flaw in current credentialing systems is that they do not say anything about an individual’s abilities in leadership and in teamwork, which are important in the workplace.

Zuber says faculty response has been mostly positive

Review Process, from Page 1 search. “No student should feel that there’s any desire to restrict student involvement,” she added. As such, impacts so far have been “miniscule,” albeit hard to measure, Zuber said. She noted that in the past, risky proposals have also been

rejected, and that this new process merely adds an additional layer of scrutiny. Zuber framed MIT’s decision to institute this new process as “proactive” in responding to federal concerns about problems like intellectual property theft and national security. “No one in the government

said that they were threatening to cut our funding,” she said. She stated that maintaining robust processes shows that MIT is “taking care of our institution and our researchers” and is much more preferable than federal intervention, since MIT better understands its own institutions and researchers.

The process was first informally communicated to faculty about a year ago, according to Zuber. The process was finalized after discussions with stakeholders, including all deans, the Office of Communications, the chair of the faculty, and the Office of the General Counsel. Zuber said that although some

faculty are concerned about how long the review progress will take, most of the response has been positive. She said that faculty have been thankful for the new process because “now they understand that the institution is looking even more carefully at our international cooperations to make sure that they are sound.”



STEVEN TRUONG—THE TECH

Members of the MIT and Cambridge community protest against MIT-Saudi relations April 4 in front of the Zesiger Center.



Amanda Bosh of the MIT Earth and Planetary Sciences department presents her story during the Fail: Inspiring Resilience event April 3.

Renovations

Stud, from Page 3

cations, Hayes said at the meeting. Ideas for location changes are currently being discussed.

In his statement, Hayes wrote that renovations began recently on the kitchen facilities next to the barber shops in the Student Center's basement. These changes were part of a "general program of upgrades to Anna's, and will help to streamline ingredient preparation." Furthermore, there will be a series of "mechanical and aesthetic enhancements this summer" on the first floor of the Student Center this summer, but Anna's will remain open, wrote Hayes.

—Zoe Sheill



Got a lot on your mind?

Share some thoughts with us!
Write for Campus Life. join@tech.mit.edu

Are you handy with a pen?

[join @ tech.mit.edu](mailto:join@tech.mit.edu)



Solution to Birthday

from page 9

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

Solution to CPW!

from page 9

1	6	2	3	4	5
6	5	1	2	3	4
5	4	6	1	2	3
2	1	3	4	5	6
4	3	5	6	1	2
3	2	4	5	6	1

Solution to 617

from page 10

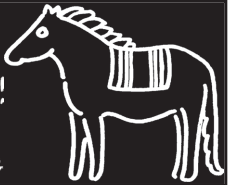
8	6	1	4	2	3	7	9	5
1	8	3	6	4	5	9	2	7
2	9	4	7	5	6	1	3	8
6	4	8	2	9	1	5	7	3
3	1	5	8	6	7	2	4	9
7	5	9	3	1	2	6	8	4
4	2	6	9	7	8	3	5	1
9	7	2	5	3	4	8	1	6
5	3	7	1	8	9	4	6	2

Solution to Timelines

from page 9

LAP	MASTS	DABS
HIVE	AWAIT	OHIO
OMEN	RANGE	NODS
BORNY	ESTERDAY	
OSTEO	HORNET	
DUO	ONEMEG	
SIB	THANK	TOTO
PSYCHOLOGY	TODAY	
OATH	ATSEA	ETA
TWEAKS	ABE	
NIPSAT	OUTDO	
UNTIL	TOMORROW	
LOPE	NOTRE	OOZE
IDOL	EPICS	PLED
TENS	TECHS	ELS

Can you beat this drawing?
Join Illustrators at The Tech!
E-mail join@tech.mit.edu



Wed., Apr. 17
4:00 - 5:30 P.M.



Lobby 13 (Bush Building Lobby)

MIT Motorsports Unveiling



MIT
MOTORSPORTS



MIT ATS PRESENTS

STRAIT TO TAIWAN

~ LOTS OF YUMMY FOOD ~
Scallion pancakes, pork rice, shaved ice, drinks, & more!

SALE!
April 17 | 11am - 3pm
1st floor Stata

Do postdocs at MIT face sexual harassment?

By Mark Goldman
STAFF WRITER

Since arriving at MIT in 2014, I have seen new initiatives that have potential to improve postdocs' ability to advocate for themselves, though they were not necessarily designed as such. Starting January 2018, MIT rolled out a mandatory Title IX training for all faculty and staff. While the goal of this training was to inform staff on how to help students and not postdocs, it does provide postdocs with information to advocate for themselves. In the same month, MIT also added a consensual re-

In contrast with the postdoc surveys that only hint at gender-based violence, the AAU survey, which is currently being administered to students, focuses entirely

I come from the perspective that meeting the unique needs of the postdoc community around gender-based violence requires obtaining data about its extent and experimenting with programs that address the vulnerable position of postdocs at the institute. To ensure MIT's efforts are effective at preventing gender-based violence on postdocs, we need to both regularly assess the experiences of postdocs through surveys and publicly disclose the prevalence of reported incidents and the outcomes of investigations, both of which MIT already does for students.

An article in last week's issue of *The Tech* regarding the Nora Theatre Company's production of *Photograph 51* swapped the names of two actors, incorrectly referencing Michael Underhill as Dr. Francis Crick and John Tracey as Dr. James Watson.

Letters, columns, and cartoons must bear the authors' signatures, addresses, and phone numbers. Unsigned letters will not be accepted. *The Tech* reserves the right to edit or condense letters; shorter letters will be given higher priority.

The Tech's telephone number is (617) 253-1541. Email is the easiest way to reach any member of our staff. If you are unsure whom to contact, send mail to general@tech.mit.edu, and it will be directed to the appropriate person. You can reach the editor in chief by emailing eic@tech.mit.edu. Please send press releases, requests for coverage, and information about errors that call for correction to news@tech.mit.edu. Letters to the editor should be sent to letters@tech.mit.edu. *The Tech* can be found on the World Wide Web at <http://thetech.com>



GUEST COLUMN

The realities of climate change

Climate change is no longer a futuristic apocalyptic scenario: it's happening here, and it's happening now

By Jonathan Sampson

Boston has found another ice rink, and it isn't at TD Garden.

In 2018, East Boston neighborhoods experienced unprecedented flooding with waist deep waters pouring through the streets. High tide measurements encroached upon 15 feet above sea level, a mark that had been eclipsed twice before — once in early January 2018, and also during the blizzard of 1978. Floods were accompanied by wind gusts peaking over 70 mph and freezing temperatures, creating sheets of ice.

Weather events like this are generally referred to as “100-year storms.” However, in the last two years, there has been an increase in the frequency of severe incidents. The southern United States and Central America experienced an unusually potent hurricane season that tore through the Atlantic in 2017. Hurricanes Harvey, Irma, Katia, and Nate occurred within a two-month span, and cost billions of dollars in repairs and humanitarian aid.

This increase in storm intensity can be attributed to the effects of anthropogenic climate change, which a majority of the scientific community has deemed a humanitarian crisis. Global climate change increases Earth's atmospheric temperatures, leading to warmer oceans and a rise in sea levels. We can't say climate change is responsible for a greater *quantity* of natural disasters, but it threatens to increase the *frequency of severe events* that do occur.

Hurricane Harvey made landfall twice from inception to dissolution. Unusually warm waters in the Gulf of Mexico “refueled”

the storm after its first pass on the Texas coast. It was downgraded from a Category 4 storm to a Category 1, but the rain and flooding of the Category 1 iteration is what caused the major damage to Houston's infrastructure — not necessarily the Category 4's wind.

We can't say climate change is responsible for a greater quantity of natural disasters, but it threatens to increase the frequency of severe events that do occur.

Warmer seas are an issue themselves, but possibly worse are the sea levels that continue to rise worldwide. Eroding coastlines threaten to displace over 140 million people by 2050. The northeastern United States may see waters rise up to 1.5 feet by then, making weather events like in East Boston commonplace.

A new field of climate research — called impact attribution science — seeks to assign a numerical percentage of the storm's intensity to climate change. It's a new field, so models are still young, but researchers say that anywhere from 20–40 percent of Hurricane Harvey's rain can be traced to climate change. This translates to approximately \$25–50 billion incurred due to anthropogenic amplification of this disaster.

So, what can we do?

We are at a point where complete avoidance isn't plausible. The strides we make to

combat climate change now shift from total prevention to increasing resilience to its effects, and mitigating further practices that contribute to overall warming.

Americans have huge carbon footprints — a consequence of rapid industrialization with little concern for the environment. Curbing personal consumption of resource-intensive goods such as meat and plastic, reducing individual car usage, and lowering daily electricity demand are all ways to reduce per capita emissions, *but the large strides will come from regulation.*

Heavily industrialized firms are some of the largest emitters of greenhouse gases. They are able to do so essentially without penalty, using consumer demand as a pass to put sustainability on the back burner. Market-based tools, like taxes that increase the cost of using carbon-intensive fuels, are regulatory schemes that price the negative effects of greenhouse gas emissions, namely from firms. These tools have garnered support from economists and professors. Implementation is an issue of legislative complications and politics.

At the federal level, Rep. Ted Deutch (D-FL), has introduced the Energy Innovation and Carbon Dividend Act (H.R. 763). This puts a fee on the use of carbon-intensive fuels, with the revenues reallocated to the public. This act is projected to reduce national emissions by 40 percent in the first 12 years, and create over two million jobs. It has support on both sides of the aisle, but not yet enough to pass.

Another proposed federal bill is the Green New Deal (H.R. 109), proposed by Rep. Alexandria Ocasio-Cortez (D-NY). This

act is a proposal to put the United States on a hardline towards carbon-neutrality. It highlights the positive outcomes stemming from an increase in national sustainability, but is having trouble garnering conservative (and center-leaning democratic) backing due to its radically progressive tone.

At the Massachusetts state level, Sen. Michael Barrett and Rep. Jennifer Benson have proposed two bills: An Act to Combat Climate Change (S.1924) and An Act to Promote Green Infrastructure and Reduce Carbon Emissions (H.2810), respectively. These bills both promote a steadily-increasing price on carbon, and using that revenue to advance our communities.

The large strides will come from regulation.

Climate change has recently become an issue on the left side of the political spectrum with deniers on the right: a major hindrance to environmental progress. But rising sea levels and warmer oceans don't care who gets more votes this November. It's happening around us now and unless we act, today's children will live in a much different world than the one we've enjoyed.

So get involved: write letters, call your representatives, and tell everyone you know to do the same. Let them know that sustainability and action is a priority. Urge them to support comprehensive climate legislation.

We have less time than you think.

Jonathan Sampson is junior at MIT studying mechanical engineering. He is also co-director of the MIT Climate Action Team, an MIT Energy Club committee.

**Tweet the best tweets?
Post the best posts?
Get a million likes on both?**

Join Social Media @ The Tech!

join@tech.mit.edu



FEATURE

Direct images of black hole taken for the first time

Results show no deviation from theory of general relativity

By Billy Woltz

On Wednesday, the *Astrophysical Journal Letters* published a special issue featuring four images that have a lot in common: they show a dark splotch surrounded asymmetrically by a bright orange ring, all against a black background. These are the first images of a black hole ever taken. Specifically, the pictures show a supermassive black hole in the center of Messier 87 (M87), a galaxy in the Virgo cluster. M87 is about 55 million light years away from Earth.

The images were the result of a years-long effort led by astronomer Shep Doeleman at the Harvard-Smithsonian Center for Astrophysics. The project involved an international team of over 200 astronomers, including members of the MIT community working at the MIT Haystack Observatory in Westford, Massachusetts.

Black holes are astronomical objects that form when the density of mass in a given place is high enough to exhibit a gravitational field so strong that nothing, not even light, can escape beyond a certain distance. This distance is known as the “event horizon.”

Because nothing escapes from a black hole, it was doubted that astronomers would ever be able to observe black holes except by indirect methods. The pictures published on Wednesday directly contradict this expectation.

To make this direct measurement, astronomers took advantage of the extreme gravity that the black hole exhibits. This gravity causes a dense gas to form outside the event horizon as matter falls in, similar to water going down a drain. The density of the gas and resulting pressure make the matter extremely hot, causing it to spew out radiation.

Using a network of eight telescopes scattered across the globe, collectively known as the Event Horizon Telescope, the researchers were able to detect this radiation and use it to form the images. This was no small feat, as viewing the black hole with the resolution in these photos required about the equivalent magnification as would be needed to read a newspaper in Tokyo from San Francisco. To magnify something by this amount, one would need a radio receiver the size of the Earth itself. The collaboration got around this requirement by synchronizing the eight telescopes so that they effectively act as one big telescope.

These images show no deviation from theoretical predictions, providing another piece of evidence to support the theory of general relativity, first developed by Albert Einstein in 1916. In the theory of general relativity, gravity is a result of the curvature and interdependence of space and time, collectively known as “spacetime.” The curvature is caused by interactions involving mass and energy. Objects can freely travel

through this bent spacetime on locally straight lines, which may appear curved to an observer if one does not otherwise account for the curvature of spacetime.

The images demonstrate a proof-of-principle that one can directly image

black holes by observing light. What’s next? According to their publications, the researchers are interested in improving the resolution of the images and studying them to develop a deeper understanding of black holes.



COURTESY OF THE EHT COLLABORATION

The first direct image of the supermassive black hole in the center of Messier 87, a galaxy in the constellation Virgo.

HELLO!

WE MAKE **THE TECH**, MIT'S
STUDENT NEWSPAPER!

If you like writing, graphic design,
photography, business, technology,
(or pretty much anything else)

**there's a place
for you here!**

NO EXPERIENCE
NECESSARY!

So if you think you might
be interested, or even if
you just want to see what we
do, **join us for dinner** in our
office on the fourth floor of the
Student Center (**W20-483**) on
Sundays at 6 pm, or email us at
join@tech.mit.edu

ANIME REVIEW

Living in a neverland where you never grow up

The Promised Neverland is a faithful adaptation of its manga origins

By Ivy Li
ARTS EDITOR

The Promised Neverland recently finished airing with a great closing episode. It's impossible to talk about the series without spoiling the first episode. Go watch it. A perfectly executed first episode hooked me in immediately, and the world-building and characterization in the rest of the show are equally impressive. The first episode should make everything clear, including whether you'd like this show or would rather give it a pass. I will try not to spoil too much, but the strength of the series comes from the tension built from its visuals, cliffhangers, and plot reveals.

Episode one opens to a lush, green forest and blue skies surrounding Grace Field House, an orphanage of children cared for by their Mother, the elegant Isabella with a loving smile. The children have gourmet food, time to play tag outside, to do chores, to study and learn, and are clearly well-taken care of. To test their intelligence, the children take mandated exams every morning. The three perfect exam scorers are the eldest of the children and our protagonists: Emma, Norman, and Ray. They are this world's Golden Trio — one athlete, one intellectual, one weirdo, with different hair colors to boot — and they become our de facto way of discovering more about this orphanage. You then notice everyone wears white clothes and sleeps in white sheets. They are forbidden from going to the gate that leads outside. The children who are adopted never write back.

The joy that seemed so palpable in such an orphanage quickly dissipates. One night, one of the children, a girl named Conny, had been adopted. She was being taken by Mother to the gate, leaving with tears but also joy at having found a family. After they leave, Norman and Emma discover Conny left her stuffed rabbit behind. They bring her stuffed rabbit and run to the gate to catch up with them. To their horror, they find Conny's corpse in the back of a truck, red flowers growing from her heart, and Mother speaking to demons about the shipments of human children for food. The next episode, Norman and Emma conclude that the purpose of the farm was to sell human children for their brains, hence the studying and examinations.

The rest of the plot plays out as an escape plot is hatched. Consequently, the narrative runs closer to a cat-and-mouse game than a B horror film, but the transition from page to screen has given this horrific element a new level: lingering shots in shadowed moments, the perpetual tension between the happy orphanage and what lurks outside. The audiovisual style is impressive. The anime's cliffhangers and the paced reveals are intelligently done, both furthering the plot and putting us in the same position as the children trying to learn the truth. I found some of the directorial decisions unnatural from the characterization of the children, like emphasizing Emma's sudden murderous expression towards Ray when she finds out he sacrificed other children to plan out his own escape, or Ray's crazed ex-

pression when blackmailing Norman, but they're minor enough that I still enjoyed the series.

Emma, despite being the caring, maternal figure to the younger children, quickly proves to be just as intelligent and as ruthless as Norman and Ray in their attempts to escape. The trio balance each other well. Norman's intelligence, Emma's generosity, and Ray's self-preservation were shown to be essential to plotting a way for helping as many of the children escape as possible. What might turn some viewers away is the maturity displayed by eleven year olds (intelligence presumably justified by how they were raised). But in such a situation between life and death, I see it as a blessing because, without this level of maturity, the series wouldn't work as a whole, which seems hellbent on amping up tension through introducing sudden obstacles, like a Sister to the orphanage, and Mother choosing to interfere when the plot slowed.

What is most impressive are the animators, whose detailed attention to the characters' facial expressions adds to the emotional resonance of certain scenes and the fear in others. Signs of discomfort that seemed a bit off were actually right on the mark when you rewatch the series and know the whole story. I was consistently impressed by the faithful adaptation of the manga, bringing out what it does best and never straying from it. The only gripe I had was the soundtrack, which wasn't memorable and merely serviceable (except for the catchy opening song). The sound design for moments of horror worked well,

The Promised Neverland

Directed by Mamoru Kanbe

CloverWorks

Jan. 10

12 episodes

and the music otherwise never intruded, for better or worse.

The anime begs you to ask the question: what is a Promised Neverland? In the anime, it's clear that the promise is not between childhood friends who wish to stay together, nor is between a child discovering death for the first time and a parent comforting the child with words that it will all be okay. It's a promise outside of the children and the parents' control by supernatural creatures that the children call demons. There's something intriguing about a *promised* neverland, a kind of utopia where you aren't able to grow up not because you chose not to, but because the choice is taken out of your hands.

Watch episodes of *The Promised Neverland* on Crunchyroll.

Want to contribute or have anime suggestions on what we should review next? Contact arts-editors@the-tech.mit.edu

Say Hello



To My Little Friend.

photo@tech.mit.edu

Happy Birthday

Solution, page 3

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

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.

CPW!

Solution, page 3

22+		7+		80x	
		7+		3	
3-			2x		3
	12x			30x	
36x		23+			2x
	8x				

Instructions: Fill in the grid so that each column and row contains exactly one of each of the numbers 1–6. Follow the mathematical operations for each box.

Timelines

Solution, page 3

ACROSS

- 1 Once around a track
- 4 Sailboat poles
- 9 Bits of paint
- 13 Honeycomb site
- 14 Be patient for
- 15 State on Lake Erie
- 16 Foreshadowing sign
- 17 Group of mountains
- 18 Nonverbal OKs
- 19 Very gullible
- 22 Prefix meaning “bone”
- 23 Stinging insect
- 24 Singing couple
- 26 Small amount of computer storage
- 30 Bro or sis
- 33 Express gratitude to
- 37 Wizard of Oz dog
- 38 Behavioral science magazine
- 42 Inauguration ritual
- 43 Between ports
- 44 Pilot’s landing guess, for short

- 45 Minor modifications
- 48 “Honest” president
- 50 Bites gently
- 54 Perform better than
- 58 News anchor’s farewell
- 60 Leisurely gait
- 62 University of ___ Dame
- 63 Trickle (out)
- 64 Revered celebrity
- 65 Heroic tales
- 66 Argued, as a case
- 67 Bills with Hamilton
- 68 Computer whizzes
- 69 Followers of kays

DOWN

- 1 Vehicles for VIPs
- 2 Prevent from happening
- 3 Wrote
- 4 Foal’s mom
- 5 Flooded (with)
- 6 ___ Domingo (Caribbean capital)
- 7 Striped roarer
- 8 Buffet fuel

- 9 Aid financially
- 10 Sailor’s greeting
- 11 Auction offer
- 12 Distress call
- 13 Wandering rail rider
- 20 Adolescent, for instance
- 21 Lions’ home
- 25 “What have we here!”
- 27 Method
- 28 Coup d’___
- 29 Spanish portraitist
- 30 Location
- 31 Part of Caesar’s boast
- 32 Data measure
- 34 In the manner of
- 35 “___ too bad”
- 36 UK weight measures
- 39 TV selections
- 40 Vote in favor
- 41 Forbidden
- 46 Set to assemble
- 47 Compact piano
- 49 Where Italy is
- 51 Terrain inclination
- 52 High storage area

	1	2	3		4	5	6	7	8		9	10	11	12
13					14						15			
16					17						18			
19				20						21				
22						23								
			24		25			26			27	28	29	
30	31	32		33		34	35	36		37				
38			39					40	41					
42						43					44			
45				46	47			48		49				
			50			51	52	53		54		55	56	57
			58					59						
60	61				62					63				
64					65					66				
67					68					69				

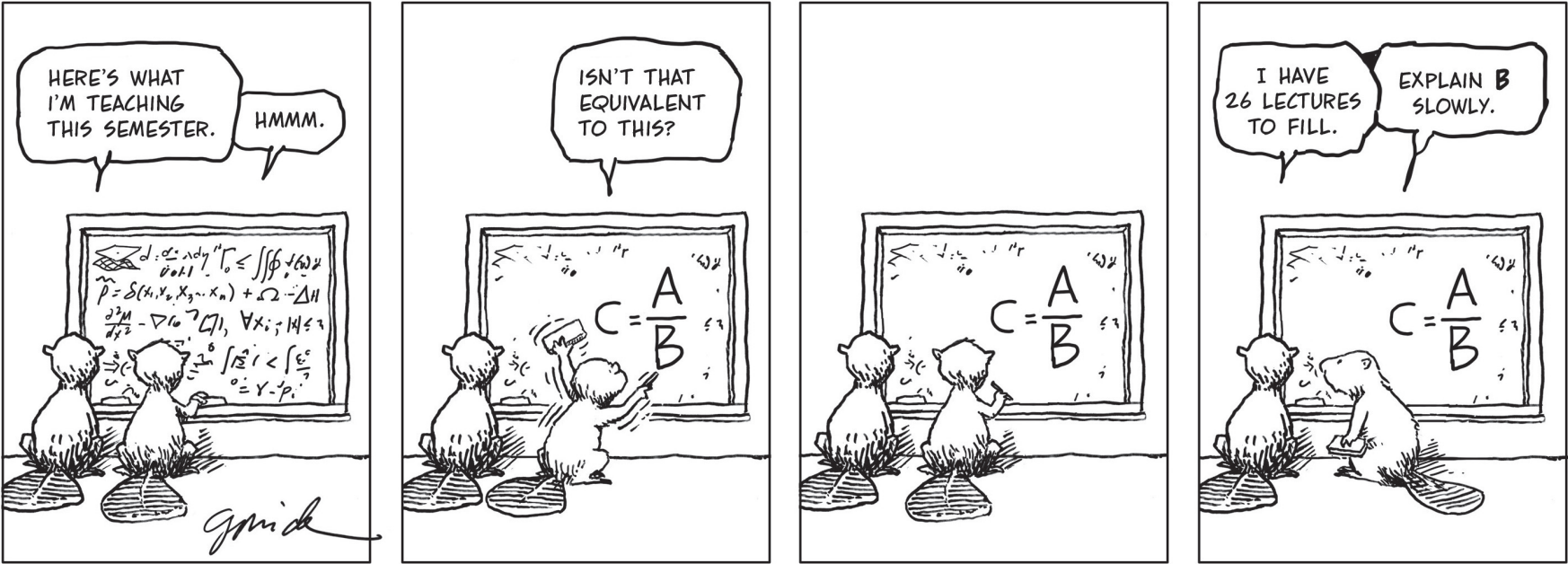
- 53 Lady Liberty’s light
- 55 Fairy tale baddie
- 56 Takes a snooze
- 57 Was beholden to
- 58 “When you wish ___ a star”
- 59 Major disorder
- 60 Kindled
- 61 Poetic tribute

AB = C

by Larry Gonick

BEAVER DOME

THE STRIP ABOUT ANIMALS YOU MAY KNOW



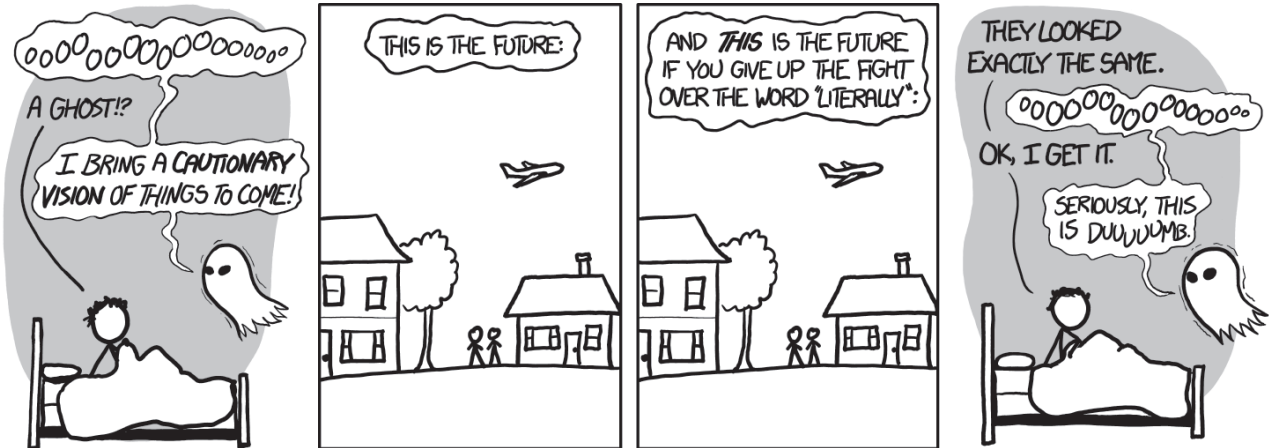
617-253-1000

Solution, page 3

48x			2÷		29+		5
	21+			9+	5		294x
18x			5-		6		24x
2-		3-		54x		5	
21x			8		56x		5-
	22+		3		11+	3-	
8x			32+				6x
63x					25+	6x	
15x		56x					2

Instructions: Fill in the grid so that each column and row contains exactly one of each of the numbers 1-9. Follow the mathematical operations for each box.

[1108] Cautionary Ghost



But then the Ghost of Subjunctive Past showed up and told me to stay strong on 'if it were'.

Elango, Green emphasize clarity on what MIT stands for

UA, from Page 1

can serve MIT in a unique way by prioritizing first the voices of our community.

The Tech: A year from now — in what tangible ways do you want MIT to be different?

Elango: In so many ways. There’s an endless list of tangible things this community can do to better itself. I think our platform really reflects where we prioritize those changes.

Green: We like to think of our platform as a vision. We want the changes that we’re proposing to be sustainable, and so we are not necessarily thinking about making sure everything that we’ve mentioned in our platform is executed in 365 days. However, we would like to lay the groundwork for those things to come into fruition.

Students are dealing with financial burdens directly tied to what they owe MIT.

Elango: I think you will see tangible differences with institutional change that’s codified. Each year, 25 percent of the undergraduate population is recycled. It’s quite a fast pace to evolve at, and the result of that is we have to be even more proactive at unifying and democratically understanding what students believe, and then actually instituting that change, so that a year later, four years later, 10 years later, that voice isn’t forgotten.

The Tech: How has running unopposed affected your campaign, if it has?

Elango: Absolutely not at all. Kelvin and I have opened ourselves up to any student to come and voice their opinion about our platform, what they would like our agenda to look like, and what they would like the UA to look like. We’ve also hosted a campaign launch party, which was a great way to see the community at once.

The Tech: The first idea listed in the “Rethink Education Policy” section of your platform is free tuition. Your website says, “Potential solutions include transparency regarding how tuition rates are calculated and subsidizing via fundraising, different budget allocations, and the endowment.”

Can you elaborate? How can the UA acquire and exert the power to influence these processes, and how will this lead to free tuition?

Elango: Admittedly, it’s a big, bold, audacious idea.

Green: We have learned that students are dealing with financial burdens directly tied to what they owe MIT. And it affects not just their present circumstances, but through their decision-making it ends up affecting their future.

Elango: Back in 2012, President Reif had convened this Institute-wide Task Force on the Future of MIT Education, and the task force released a report with 16 recommendations. One of them was that MIT should strengthen its commitment to access and affordability, and I directly quote, “MIT needs to do even more” in terms of “making an MIT education as affordable as possible for students from all socioeconomic backgrounds.”

What Kelvin and I are proposing is not radically new. It’s something that even senior administrators know is something MIT must do, and must continue to do.

The Tech: But have you heard or read anything that suggests MIT considers free tuition specifically to be within the realm of discussion?

Elango: Kelvin and I have been in discussions with students and administrators who have access to information about how our tuition number is created, but because these are confidential numbers right now, one of our biggest goals with this initiative is to make that transparent, so that every single student here understands where every dollar they’re putting into their tuition money goes.

Green: Also, MIT purports to be affordable. And when we speak with students who have a variety of experiences (including my own), it appears that as MIT continues to purport that, it feels like it’s invalidating the experiences of students who will never be able to say that MIT was affordable for them.

Green: We’ve learned that the debt that [students] are incurring also influences the internships they choose to pursue, the majors that they choose to take on. We’re doing a huge disservice if MIT is de-enabling the ability of students to pursue the passions that they came with.

The Tech: An additional idea you list is to “decouple [the] current advising system and create an Institute-wide matching system.” How will this be implemented, and in what ways will advisor-advisee relationships be improved?

Elango: This is something that Vice Chancellor Waitz is very much in support of. Right now the expectation is that our advisor does a myriad of roles: he or she is responsible for life advice, career advice, major advice — prerequisites, course mapping, add-drop forms, petitions.

When we look at our peer institutions and we reflect back on what are sources of knowledge in advising, it’s not just our major advisor. There are deans and counselors and alumni and upperclassmen that have a lot of collective experience that could help reduce the burden on our current advisor. And so when students are actually picking their advisor, it doesn’t have to be to satisfy all these roles, but actually

perhaps the intended role of career and major advice.

The Tech: Another pillar of your platform is “Eradicate Food Insecurity.” This has been an important priority for many student leaders and administrators. What is your opinion on their progress so far? Will your approach differ, and if so, how?

Elango: I think we’ve made great strides in eradicating food insecurity, but we’re not there yet. Success is only when zero percent of students face food insecurity. Programs like TechMart, SwipeShare, and free grocery shuttles have all helped move us in the right direction.

Success is only when zero percent of students face food insecurity.

Kelvin and I see even more conversations in our meal plan system — what is the real cost to our meals, and where does that number come from? How can we redesign existing student spaces to provide low-cost, nutritious, diverse food? How can we address understaffed dining halls, long waits, poor food quality?

Like you said, there are so many student groups working on the same issue, and we all have the exact same goal. We can put all the voices that worked on this issue in one room and really put our resources and ideas together to tackle it.

Green: MIT must accept that changes must be evaluated and new ideas created to make sure that MIT doesn’t only eradicate food insecurity, but that it never affects the undergraduate student population again. This takes continual and consistent efforts by our community.

The Tech: The next pillar I’d like to discuss is “Institutionalize Administrative Transparency and Accountability.” Why “institutionalize”?

Elango: I think this particular idea requires permanency in establishing a culture. And while we can talk about it, discuss it, and hope for it, [transparency and accountability won’t] permeate every single office and arm at MIT unless it’s institutionalized. And we need that.

This isn’t just externally facing. We’re also talking about ways we can institutionalize the UA’s own transparency and accountability. Kelvin and I want to put all non-emergency initiatives seeking approval from the UA Council online for a week to allow students to review and comment on them before they are enacted.

And it’s not just about collecting feedback, but also responding to it so that students know that anything they say is actually discussed and addressed, whether that be through aggregating data we collect, responding to particular students, reaching out to them and including them in our working groups, hold-

ing forums and town halls, holding office hours, or having feedback boxes around campus.

Another important part of transparency and accountability is the budget. All budgetary decisions seeking approval from UA Council must be available to the public, as well as our rationale for making those choices. Our hope is that in institutionalizing real transparency and accountability in the UA, and showing how effective it is, then the rest of our community will follow.

Green: Leadership changes, students come and go, and maybe there is a culture now where this would be accepted, but when Mahi and I are both gone, we could enter new leadership where that culture is not accepted. So we believe that institutionalizing demands that MIT value transparency and that the different arms of MIT are on board with that shared value into perpetuity.

The Tech: What kind of relationship do you envision between the UA and administrators?

Elango: I truly believe that we all have the same goal, which is to make MIT a better community for everyone who is a part of it. I see a very cooperative [relationship], one where we’re honest, and we’re open to change.

The Tech: In situations where students and administrators are in disagreement, what do you see as your role?

Elango: I think the UA is the bridge that connects these two stakeholders together. We need both stakeholders to mutually agree for anything to be successful. But at the end of the day, we’re in these conversations for students, and that will always be our number one priority.

We want to put all non-emergency initiatives seeking approval from the UA Council online for a week to allow students to review and comment.

Green: Mahi and I believe that it is our job to push back if we must. Through those difficult but critical conversations, a greater outcome that benefits both groups will be reached.

The Tech: One issue that is not addressed in your platform but that has been a heated topic recently is mutual selection. What is your view on this issue? What do you see as your role?

Green: I would push back in saying that we are not addressing it. I think the fundamental issue was not why senior administration was advocating for the culture around mutual selection to be changed, but how they went about communicating that with the student body.

So through our platform about administrative transparency, I think we are addressing the frustration and the concerns of why this topic created so much stress for so many students on campus.

The Tech: Of course, we did not have time to discuss every part of your platform. Among the things we missed, is there a particular one you would like to highlight?

Elango: I think a lot of questions that students have can be rooted back to lack of clarity of what MIT truly stands for. Our hope for a MIT-wide policy platform is that we come together as a community and think about our shared values and how they translate into solutions that resonate with everyone, and that in doing so it sheds light on how policy decisions are made.

This place is full of magic, and craziness.

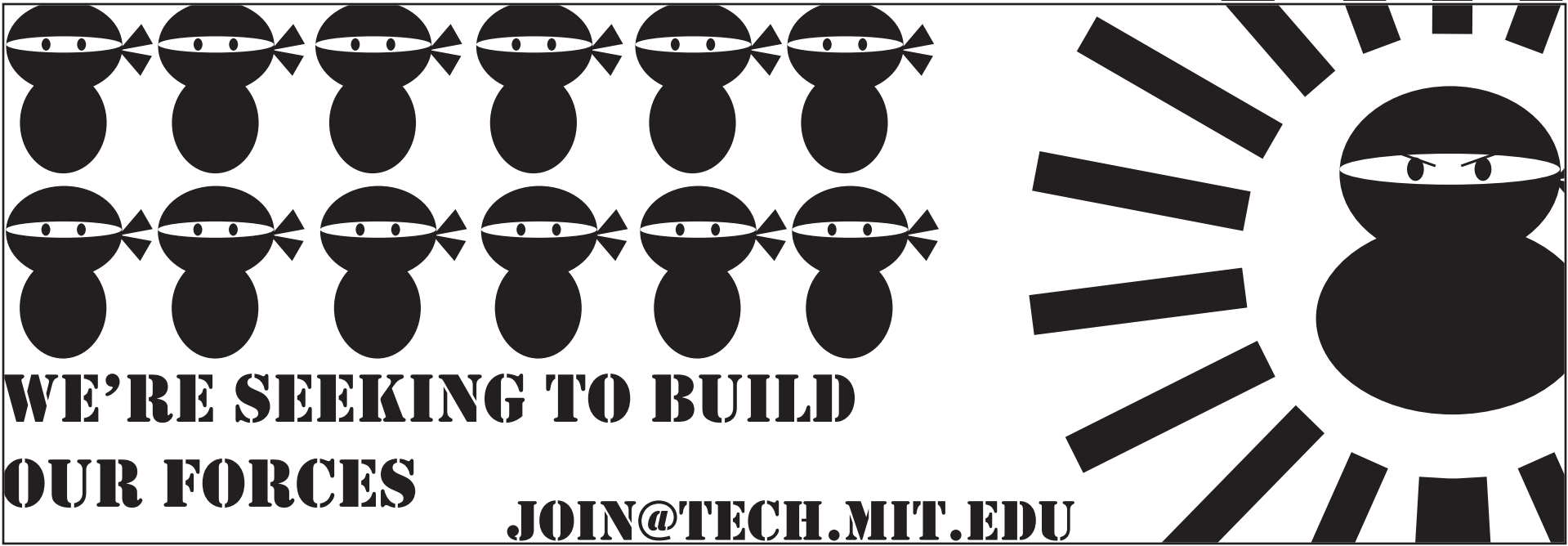
For example, the MIT Corporation sends visiting committees for each department and senior administrators. That fact is not highly publicized, and the methods in which they collect feedback are not unified. We also don’t always consult experts when we’re making policy decisions, whether that be faculty members or institute offices.

And there’s no institutionalized student involvement when hiring new faculty and staff and constructing new buildings. What exists now is a particular administrator thinks it’s in the community’s benefit to include students on a particular task force, but that’s not a guarantee, and it only invites particular students; it doesn’t invite the entire community. The hope is that the policy platform does exactly that.

Green: Regarding the College of Computing, I think we’re at a very critical moment — honestly, in the history of the world — around how we think about ethics in this technological period of moving toward computation as the predominant method of solving complex problems. And we’ll now have a college completely dedicated to computation. It would be a huge mistake if we did not consider the ethical implications of such a design.

Elango: I think we need to create benchmarks that foster inclusion and support diverse faculty members, staff, and students from the very beginning, and develop milestone goals to actually achieve those benchmarks. This isn’t just an idea that may come to fruition: it must. We need to think about engineering ethics and the social implications of technology for all students who are a part of the College of Computing.

Editor’s note: This interview was edited for length and clarity.





YOU'RE IN CONTROL.

No Matter Where Life Takes You...

We provide simple, convenient ways to make your financial life easier.

MIT students automatically qualify for membership.

- Checking and savings accounts to credit cards and loans
- Anywhere, anytime account access with mobile app
- 35,000+ surcharge-free ATMs
- No fee on incoming wires
- Keep your account safe & secure with Wallet Pay & Visa Text Alerts



mitfcu.org

Insured by NCUA 

Join us for **COMMUNITY FORUMS** on the **MIT Stephen A. Schwarzman College of Computing Working Groups**
April 17 and 18

Joint forum with the **Social Implications and Responsibilities of Computing & Academic Degrees** working groups

Wednesday
April 17
10:30am – 12pm
Kresge Little Theater
W16-035

Joint forum with the **Organizational Structure & Faculty Appointments** working groups

Wednesday
April 17
1 – 2:30pm
Kresge Little Theater
W16-035

Forum with the **Computing Infrastructure** working group

Thursday
April 18
10:30 – 11:30am
Samberg Dining Room 3 & 4
E52, 6th floor

for more info: comptf.mit.edu

