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Thursday, October 17, 2019

# Results of sexual assault and misconduct survey released Survey reveals that 7.2 percent of MIT students

have experienced nonconsensual sexual contact

By Kerri Lu STAFF REPORTER

MIT's results from the Spring 2019 Association of American Universities (AAU) Campus Climate Survey on Sexual Assault and Misconduct were released in an email from President L. Rafael Reif and Chancellor Cynthia Barnhart PhD '88 to the MIT community Tuesday.

The survey, conducted at 33 universities, contained questions on topics ranging from student experiences of sexual assault to knowledge of campus resources for sexual misconduct prevention and response.

At MIT, 1,943 undergraduates and 2,399 graduate students participated in the survey, yielding an overall response rate of 39.6 percent. Women undergraduates had the highest response rate among all students of 52 percent.

According to the survey, 7.2 percent of MIT students have experienced nonconsensual sexual contact by physical force or inability to consent. This includes 18.4 percent of undergraduate women, 13.9 per-

cent of non-heterosexual students, 11.9 percent of transgender, genderqueer, or nonbinary (TGQN) students, 8.3 percent of graduate women, 6.5 percent of undergraduate men, and 1.4 percent of graduate

These rates were slightly lower than the AAU nationwide averages. Thirteen percent of all students in universities participating in the survey experienced nonconsensual sexual contact, with rates of 25.9 percent for undergraduate women, 11.9 percent for TGQN students, and 9.6 percent for graduate women.

In an interview with The Tech, Barnhart said, "The rates that we cite for MIT are lower than those for the AAU aggregate schools. But we want to make sure that as we're talking about this, we send the message that the rates at MIT are still very concerning. We have a problem."

The survey found that one in six MIT students experienced sexual harassment, and that 70 percent of this group were women. One in three TGQN students at MIT experienced sexual harassment.

Seventy-nine percent of MIT students responded that it is very likely that campus officials would take a report of sexual assault seriously, and 61 percent responded that it is very likely that campus officials would conduct a fair investigation of reported sexual assault. There was a statistically significant difference between the reponses for women and men: 84.2 percent of undergraduate men indicated that campus officials would take a report of sexual assault seriously, compared to 68.4 percent of undergraduate women.

Only 33.1 percent of students reported they were very knowledgeable about how MIT defines sexual assault. 41.4 percent reported they were very knowledgeable about where victims of sexual misconduct can find help. 92.3 percent of incoming students and 83.7 percent of returning students reported that they had completed at least one training about sexual misconduct.

Two in three MIT students reported that they are aware of MIT's

Survey, Page 2



Cellist Valerie Chen '22 performs with a pencil as part of Thursday's performance of The Heart is a Bell, presented by Iva Bittová and the MIT Symphony Orchestra.

### **IN SHORT**

Monday, Oct. 21 marks the start of classes offered in second half

The next **flu shot clinic** is on Oct. 21 from 2 p.m. to 6 p.m. at the Stratton Student Center.

Family weekend runs Oct. 25-26.

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.

# Two MIT economists win Nobel **Memorial Prize in Economics**

Profs. recognized for their work in development economics

**By Kristina Chen** 

ASSOCIATE NEWS EDITOR

MIT economics professors Abhijit Banerjee and Esther Duflo PhD '99 were awarded the 2019 Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel on Monday for their work on anti-poverty research, Harvard economist Michael Kremer is a co-winner of the prize.

Duflo, at 46, is the youngest person and the second woman to have

ever won the Nobel Memorial Prize in Economic Sciences.

According to a press release from the Royal Swedish Academy of Sciences, "the research conducted by this year's Laureates has considerably improved our ability to fight global poverty. In just two decades, their new experiment-based approach has transformed development economics."

The work done by Banerjee, Duflo, and Kremer involves using randomized controlled trials to examine the effects of small interventions in improving global issues, such as child healthcare and education, in developing countries. Their research uses empirical data to discover causal relationships that can be applied to alleviate global poverty.

Duflo is the Abdul Latif Jameel professor of poverty alleviation and development economics and Baner-

Nobel Prize, Page 8

# Commencement to remain the same

### Potential changes being considered for class of 2021 and beyond

By Rujul Gandhi

NEWS EDITOR

The Commencement and Doctoral ceremonies for the class of 2020 will remain the same as those of previous years, Executive Officer for Commencement Gayle Gallagher announced in an email to the MIT community Oct. 11. Potential changes are still being considered for the class of 2021 and beyond.

According to Gallagher's email, the Academic Council made the decision to keep Commencement the same for the class of 2020. Under this structure, all degrees will be awarded on Killian Court. Doctoral degree candidates will receive diplomas on Thursday, May 28 while bachelor's and master's degrees will be awarded on Friday, May 29.

Gallagher wrote that a committee comprising students, staff, and faculty will "develop plans for a meaningful and celebratory Killian Court experience for all graduates" with Commencement 2021 in mind. The committee will be led by Professor James Poterba.

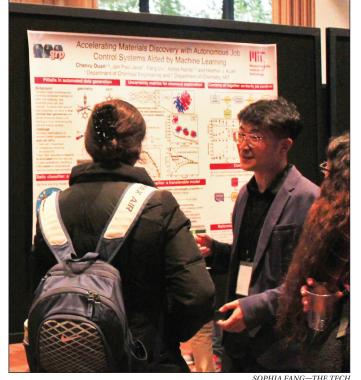
Undergraduate Association President Mahi Elango '20 wrote in an email to The Tech that the UA had "several meetings with Chancellor's

Office and the GSC" to represent undergraduate opinion.

Elango wrote that 84 percent of respondents in a survey sent out to all undergraduates "did not prefer the proposed changes ... to the current structure." The "OneMIT + Schools" structure of Commencement proposed a ceremony for the whole class in Killian court, followed by degree conferral at locations separated by department or school.

President of the Graduate Student Council Peter Su G wrote in an email to *The Tech* that although the

Commencement, Page 8



Students in the MIT Materials Research Laboratories present their work at Materials Day in La Sala Wednesday.

### THE CASE FOR **DIVESTMENT**

Engaging with fossil fuel companies is a failed strategy.

OPINION, p. 5

### **MENTAL HEALTH AT MIT**

Dean for Graduate Education and Vice Chancellor respond. OPINION, p. 4

### **NAVIGATING CITIES:**

Using data to understand urban interactions. SCIENCE, p. 7



### **LOOT YOUR HEART OUT**

Borderlands 3 brings adventure back.

ARTS, p. 6

### THE BREAK-**THROUGH**

Nobel Laureate Jim Allison fights cancer. ARTS, p. 6

### SECTIONS

Ориноп	.4
Arts	.6
Science	.7
Fun Pages	.9
Sports	12

2 The Tech
Thursday, October 17, 2019

**WEATHER** 

# New England is feeling like... New England!

By Kyle Morgenstein

After a beautiful weekend for fall break, New England is back to her old tricks. The remainder of this week and the better part of the weekend will be marked by scattered storms, blustering winds, and temperatures ranging from the upper 40s to upper 50s, with maybe a few hours of low 60s warmth on Sunday. The storm system working its way through New

England should pass by Monday though, opening up a bright new week with some much-needed

The Pacific Northwest is also receiving her fair share of rain, typical for this time of year. The rest of the country is surprisingly dry this weekend, with some cloud cover over the Rockies but an otherwise sunny fall weekend. It almost makes you question if there's something spooky to come... Stay tuned!

### **Extended Forecast**

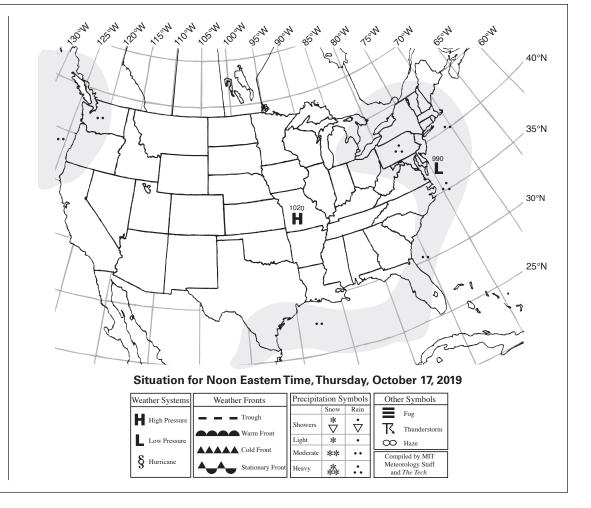
Today: Scattered showers. High of 56 °F (13 °C) with strong northeast winds up to 30 mph.

Tonight: Scattered showers will continue into the evening, with a low of 47 °F (8 °C). Winds will subdue to 15 mph.

**Tomorrow**: Scattered showers in the morning, but clear for most of the day. High of 59 °F (15 °C) and a low of 42 °F (6 °C) with southeast winds of 15 mph.

Saturday: Sunny with a high of 61 °F (16 °C) and a low of 42 °F (6 °C).

Sunday: Partly cloudy. High around 61 °F (17 °C) and a low around 48 °F (9 °C).



# Barnhart to hold forums on sexual misconduct prevention and response

Survey, from Page 1

Violence Prevention and Response (VPR) and Title IX and Bias Response (T9BR) offices as resources for victims of sexual assault. The greatest percentages of respondents were aware of MIT Medical (94 percent), MIT Police (86 percent), and MIT Student Mental Health and Counseling Services (81 percent).

In response to the survey results, Barnhart is organizing a series of community forums on sexual misconduct prevention and response. The first forum will be held at 4 p.m. on Tuesday, Nov. 5 in 10-250.

During the forum, four working groups (Leadership and Engagement, Training and Prevention, Policies and Reporting, and Academic and Organizational Relationships) will present recommendations and collect community feedback in response to the 2018 National Academies Report on the Sexual Harassment of Women in Science, Engineering and Medicine.

Barnhart plans to expand ongoing sexual misconduct education for students and employees. "We have to provide education that touches the whole community. We've moved from requiring incoming first years to take sexual assault online training to requiring that all members of our community do that. For the next step, we need to be more systematic and comprehensive with increasing education efforts, especially in-person training," Barnhart told *The Tech*. For that purpose, new staff will be hired in VPR, T9BR, and Student Mental Health and Counseling Services.

Within T9BR, a new Institute Discrimination and Harassment Response Office (IDHR) will be launched next semester. IDHR will implement a new policy for complaints of sexual misconduct against faculty and staff, including commissioning professional inves-

tigators for neutral fact-finding and increased transparency about aggregate outcomes.

In Spring 2014, Barnhart developed and administered a campuswide survey to measure MIT community attitudes on sexual assault. According to Reif's email, this was "the first [survey] of its kind in US higher education." In 2014, 35 percent of female undergraduates, 16 percent of female graduate students, and 14 percent of male undergraduates at MIT reported experiencing sexual harassment or assault.

Barnhart said that because MIT did not participate in the 2015

AAU survey, it is difficult to directly compare the change in prevalence of sexual misconduct at MIT over time. The nationwide aggregate survey results show that the rate of nonconsensual sexual contact increased from 2015 to 2019 by 3 percent for undergraduate women, 2.4 percent for graduate women, and 1.4 percent for undergraduate men.

"One interpretation of these results is that many of the efforts [to reduce sexual misconduct] weren't so effective. But some experts say that increased awareness is in part contributing to those numbers increasing because people can name the experience now," Barnhart said.

### Annual Security and Fire Safety Report released

The MIT Police Department released its Annual Security and Fire Safety Report Oct. 9. The report includes information about the Police Department's operations, services, and resources, along with statistics regarding criminal and Violence Against Women Act (VAWA) offenses, arrests and disciplinary referrals, hate crimes, and fire safety, from 2016 to 2018.

The total number of criminal offenses grew from 63 in 2016 to 92 in 2018. Contributing to this change was the increase in reports of burglary from 25 to 45 and the increase in reports of rape from 13 to 22. Inversely, reports of aggravated assault decreased from seven to three

VAWA offenses also increased from 28 to 33 cases over the two years. While there was a decrease in reports of domestic violence from 13 to eight, stalking reports increased from eight in 2016 to 14 in 2017 to 18 in 2018. Dating violence offenses fell from seven to three from 2016 to 2017 but rose to seven again in 2018.

The majority of cases of rape, domestic violence, and dating violence occurred in campus residence halls. The report also lists on and off-campus resources for survivors of sexual assault, defines consent, and describes safety and reporting procedures to follow in the event of sexual assault.

For arrests and disciplinary referrals, there was a decrease from 2016 to 2018, with liquor law violations falling from 77 to 31 cases. In addition, drug abuse violations decreased from 11 to one from 2017 to

2018, and there were no weapons violations recorded in 2018.

No hate crime related to disability, ethnicity, gender, gender identity, race, national origin, religion, or sexual orientation was reported in 2017 and 2018.

The report also includes data on on-campus fires, which have decreased from three in 2017 to one in 2018.

Crime reports can be made to the MIT Police at (617)-253-1212 or anonymously at (617)-258-8477.

—Kristina Chen







**New Exhibition** 

# Alicja Kwade In Between Glances

# **Exhibition Opening Reception**

Thursday, October 17, 2019 | 6:30-8:30 PM

# Panel Discussion: Visibility of Time

Friday, October 18, 2019 | 2:00 PM | Bartos Theater

# On view October 18, 2019–January 5, 2020

Gallery Hours: Tues., Wed., Fri., Sat., Sun., 12–6 PM; Thurs., 12–8 PM Admission is free.

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### **LETTER TO THE EDITOR**

### Dean for Graduate Education and Vice Chancellor respond to piece on graduate student mental health

This is a response to an article published Oct. 10, "Graduate student mental health is in crisis."

To the editors,

We are writing in response to the opinion piece "Graduate student mental health is in crisis" that appeared in the Oct. 10, 2019 issue of *The Tech*. Authors Jeff Rosenberg, Sarah Cowles, and Nick Selby, writing on behalf of Graduate Students for a Healthy MIT, advocate for creating "a healthier academic environment for [all graduate students] to grow as scholars and people."

We too are committed to that end and applaud the authors for elevating this crucial matter and providing an opportunity to foster conversation — and, most importantly, action. We will be meeting some of the authors soon to discuss how we can best collaborate. Our colleagues from MIT Medical have already begun working with the authors to better understand the issues that the piece raised about mental health, so we will focus our comments on improving the advisor-advisee relations and enhancing local-level climate.

Like the authors, we have cited and extensively shared across campus the results from a University of California Wellbeing Survey that suggest that having a supportive advisor-advisee relationship is one of the most important protective factors for ensuring that a graduate student feels supported. At MIT, we know from a meta-analysis that Institutional Research conducted on graduate student advising and professional development that the advising relationship is the biggest indicator of how graduate students feel about their entire MIT experience.

Spurred by these insights as well as strong advocacy from the Graduate Student Council, we have been working collectively with our schools, departments, student leaders, and other Institute partners to coordinate efforts to improve graduate student advising, from training to promoting best practices.

Recent progress includes a multipronged response to the National Academy of Science and Engineering (NASEM) report that assessed sexual harassment of women in STEM fields. Of note is a presidential advisory board, one component of which is a working group focused on addressing academic and organizational relationships. Led by Professor Paula Hammond, ChemE department head, and Professor Tim Jamison, associate provost, this group will soon be making recommendations on ways to enhance mentoring networks and is exploring models for research funding, advising, and supervision. Moreover, last spring, President Reif devoted a Department Heads lunch to these topics and they have been regularly discussed among the faculty graduate officers and the graduate administrators.

In parallel, a pilot drawing upon expertise from the Center for the Improvement of Mentored Experiences in Research (CIMER) will soon be underway to offer mentorship training for faculty in the School of Engineering. EAPS also just participated in a three-hour CIMER training to address advising and inclusion. The Mind-HandHeart's Department Support Project (DSP) has been helping departments develop plans to improve local climate for the past few years. The MHH DSP is supported by the Provost and the Chancellor and is designed to bring together department leaders, data analysts, students, and key experts in student life, teaching and learning, diversity and inclusion, and human resources.

We have been excited to see the rise of school-based activities like GradSAGE, a new graduate student-led advisory group launched by the MIT School of Engineering in late 2017. This group has been instrumental in leading an advisor philosophy statement pilot, now active in EECS and AeroAstro. At the same time, we're doubling down on existing efforts such as OGE's Committed to Caring, a program that recognizes excellent faculty mentors and now a new peer faculty advising/mentorship program.

As the authors point out, another key aspect of encouraging positive change is

developing more tools that promote transparency within and across departments. This summer, OVC and the Teaching and Learning Lab conducted the Graduate Advising Practices survey to gain a better understanding of graduate advising practices across the Institute. The questions were focused on the advisor selection process, resources for students, feedback to advisors and training in advising and mentoring. As a result, in the coming weeks, a team from across MIT expects to release an "advising playbook" or roadmap to help guide departments to best practices and there are discussions about ways to assess progress.

Other activities to achieve increased transparency include investigating how to best manage transitional funding; testing a multiple advisor model; offering students individual development plans; and conducting formal end of semester reviews.

Finally, we are investing in training for both faculty and students. This summer, in partnership with the learning company EverFi, we created a new Diversity, Equity, and Inclusion module, required for all incoming students and recommended for all current ones. This was in keeping with the recommendations by the BSU & BGSA and was well received by students, administrators, and departments. TLL also launched MIT Teaches, a series of workshops and activities aimed to support MIT faculty, instructors, and teaching assistants in teaching for equity and academic belonging.

We agree with the authors that greater accountability, standard on-boarding and continual training opportunities for new and current faculty, and ways to help students to transition to other advisors are laudable aims.

To achieve this vision, we will need faculty, student, and staff leadership from all levels of the Institute. Again, we thank Graduate Students for a Healthy MIT and their supporters for championing change and look forward to working with them to make MIT a better place to live and learn.

Blanche Staton, Senior Associate Dean for Graduate Education, Director of the Office of Graduate Education

Ian A. Waitz, Vice Chancellor for Undergraduate and Graduate Education

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# The case for fossil fuel divestment over engagement

Can we shift oil and gas companies' behavior through engagement or is it time for a new approach?

By Darya Guettler

MIT Divest, a new movement on campus, is calling on MIT to take leadership in addressing the climate crisis by divesting from fossil fuel companies, detailing in an article two weeks ago why divestment should be the path forward.

Opponents of divestment have argued that through shareholder engagement and discussion, fossil fuel companies can be reasoned into taking meaningful steps toward addressing the climate crisis — steps that divestment would jeopardize.

While this is the image that many corporations such as Chevron and ExxonMobil wish to portray, the extent of their apathy towards the climate crisis is often hidden from the public. We cannot hope to work with companies that fight the term "climate change" tooth and nail, using tools such as climate disinformation and anti-climate lobbying to advance one terrifying goal — to continue extracting and burning fossil fuels, at increasing rates, for financial gain.

Climate change may have become a leading political issue in the last decade, but it has been discussed since the mid 1900s, and research by none other than ExxonMobil has been done on the topic as early as 1978.

The verdict of that study?

In that 1978 report, Exxon's Senior Scientist James Black stated that "present thinking holds that man has a time window of five to 10 years before the need for hard decisions regarding changes in energy strategies might become critical." Exxon *knew* about man-made climate effects before it was widely discussed by the scientific community. And they acted on it — not by being a leader in the fight against climate change but by covering up the urgent need to take initiative on this issue.

This study launched an industry-wide attack on climate change advocates. Think tanks and groups with innocuous names such as Global Climate Coalition and National Coal Association, Information Council for the Environment (ICE), Western

States Petroleum Association (WSPA) and the American Petroleum Institute (API) popped up. These groups have been part of numerous disinformation campaigns since their inception, organizing fake climate conferences, leading anti-climate lobbying on the Hill, and sowing doubt about the reality of the climate crisis. WSPA, for example, has on multiple occasions created "astroturf" or fake grassroots — groups, in order to influence legislation for emission caps. ICE is famous for its extensive advertising campaigns, with slogans like, "Who told you the earth is warming... Chicken Little?" and, "Some say the earth is warming. Some also said the earth was flat."

### We cannot hope to work with companies that fight the term "climate change" tooth and nail.

API's mission, as laid out in 1998, declares that victory will not be achieved "unless climate change becomes a non-issue, meaning that the Kyoto Protocol is defeated and there are no further initiatives to thwart climate change." Between 2000–2016 alone, the fossil fuel giants spent \$2 billion funding anti-climate lobbying, funneled primarily during congressional sessions when important emissions-limiting bills reached the House Floor. While these companies may not be acting on the research when it comes to climate change, climate disinformation and lobbying has become a precise and deadly science.

When Googling something as simple as "Fossil Fuel Divestment Facts," the first link to come up is not from a climate activist group, but rather from the American Petroleum Institute, giving various arguments against this financial mechanism, many of which have been vehemently argued against by economists. This goes to show how much money and effort fossil fuel companies have invested in controlling the dialogue around

divestment and misdirecting those interested in learning about it.

Some have argued that the investments that fossil fuel companies have made in renewable energy research demonstrate that they can be fruitfully engaged in efforts to fight climate change and that divestment would be counterproductive. It is true that some fossil fuel companies have funded renewable energy. For example, Total SA has started increasing investments into electric vehicle companies and owns 66 percent of SunPower, one of the three largest solar providers. However, contributions like these are still a drop in the bucket compared to the value of investments going towards more efficient fossil fuel recovery and burning. Companies spend between zero to 4.3 percent of their total capital expenditure on renewable energy. Combined, the 24 largest oil and gas majors spend 1.3 percent of their total \$260 billion capital expenditure on low carbon technologies. Clearly, being part of the transition to renewable energy is not a priority for many of the fossil fuel giants.

We want the most effective solution to fighting this global threat. We want everyone to be involved in the clean energy transition. But why would we faithfully and trustingly work with those who are actively trying to deceive us about the nature of the climate crisis? Those who invest more time and capital into lying about the urgency of the issue than renewable R&D? It is naïve to think that we have the time to work from within these entrenched and uncompromising companies to alter an anti-climate framework that has been growing for decades.

So far, there is little evidence that by cultivating relationships with fossil fuel companies, MIT has been or will be able to significantly decrease the quantity of environmentally destructive fuels they extract. Globally, proven fossil fuel reserves would emit more than \$2 trillion tons of carbon dioxide emissions, vastly exceeding the amount of carbon dioxide that can be released if global warming is to be limited to 2 degrees Celsius, much less the original

1.5 degrees Celsius target. Most of these reserves simply must stay in the ground if climate change is going to be limited to survivable levels, and yet fossil fuel companies are continuing to explore for more reserves all the time.

Given that these reserves represent trillions of dollars of potential revenue, it is hard to believe that fossil fuel companies would fund or otherwise support anything that actually limits their ability to extract and profit from their reserves. They must experience concrete impacts from public and institutional backlash against their reckless extractivism.

In its Climate Action Plan, MIT stated that it would use its name and brand to educate its industry partners on the importance of climate change. I am calling on the MIT administration to disclose to its community its active efforts to work with fossil fuel companies to combat climate change. Give us clear and meaningful benchmarks and metrics used to quantify success, as the administration has previously promised and never delivered on.

Has MIT's engagement had a substantial impact on the practices of climate disinformation propagated by the oil and gas majors? If the engagement strategy has not succeeded in this regard, then MIT needs a new approach. It is time for these companies to be held accountable not by their shareholders, but by the people they are deceiving. It is time to join a global movement that sheds light on the moral wrongs we are witnessing and succeeds where engagement has failed.

### It is time for divestment.

We claim to be an institute devoted to the pursuit of scientific truth for a better world. Let us continue this tradition by showing the world that we have lost trust in the fossil fuel industry and refuse to be complicit in their efforts to spread misinformation. Let us put an end to their lack of respect for science and everything that MIT stands for.

Darya Guettler is a member of the class of 2021 studying mechanical engineering and political science. She is also a member of MIT Direct

**GUEST COLUMN** 

# Why is taking Epstein's money wrong?

Discussion on this controversial issue should be encouraged, not shunned

By Stephen Filippone

On Oct. 1, I spoke at the student forum organized by MIT to hear comments about the Epstein-MIT scandal. I was one of the few to raise concerns that perhaps students were jumping too quickly to calls of retribution before the issue of Epstein money had been fully discussed. I called for campuswide dialogue (something I've never experienced at MIT in four years). Reif echoed my words by calling for conversation. I have one suggestion for how to make this happen.

The idea is called deliberative polling. It's called polling because the opinions of participants are surveyed before and after the event. The goal is to have participants spend one or two days with a representative sample of the MIT population to discuss issues. The shift in public opinion is attributed to participants becoming informed on the issue. It has been implemented many times and very notably reported on in the NYT as applied to the 2020 election. This is the most impactful action we can take as a community.

In case that never happens, I'll leave you with the thoughts of students you may or may not have heard yet. These ideas are my own but have been discussed with many students who feel similarly. For one reason or another, they don't feel comfortable speaking freely in the current climate.

I don't know why anonymously taking Epstein's money was wrong.

At first, it seemed natural to recoil in disgust at finding any association with a monstrous individual. It even made sense that Ito should resign after going against MIT policy in secretly taking that money. But now we know that he took the money with permission from MIT administration. It would seem to me then that Ito did nothing wrong. But instead some are calling for all

involved MIT administration to resign. It is these further calls to resignation that I cannot understand.

# Although the specifics and timeline around Epstein are difficult to understand, we all agree on some facts.

Although the specifics and timeline around Epstein are difficult to understand, we all agree on some facts. Epstein was a convicted sex offender. MIT administration, including Reif, agreed to take donations from Epstein in spite of his criminal record. The money was used to fund research, and the donation was made anonymous. If MIT's only crime was deciding to take the money of an ex-felon, then I must be missing something.

MIT has no authority to investigate the potential criminal activity of its donors. Epstein was a failure of the criminal justice system. Tasked with keeping the public safe, the system let loose a clear danger to society. Worse, this appears to have happened not out of incompetence but due to corruption on the part of then-Attorney General R. Alexander Acosta. It's hard to believe why he decided to take a plea deal with Epstein and not indict him with federal charges. The MIT community should focus its ire on our corrupt government institutions and the associates of Epstein, who are criminals.

The Epstein conversation inevitably leads into a separate conversation about dark money. In my understanding, dark money is the act of taking money from groups or individuals who are disliked by the general public. "Dark money" is a broader issue and should

be a separate conversation, so I'll just share two brief points.

Lumping different donations into one large group of bad actors is confusing and tribal. Does it make sense to consider exfelons, companies, foreign governments, and certain rich people with certain political ideologies part of the same group? Each situation has important nuances that make them unique and should be discussed separately. There can be similarities, but they are not all simply "dark money."

My second point relates to the unclear philosophy underpinning the disgust with "dark money." Is dark money ill-gotten, or is it legitimately earned but given by a bad person? Is it possible for bad people to do good things? Should we allow or encourage "bad" people to redeem themselves, if not fully then at least partially? Would the world not be a better place if we found ways to cooperate with our enemies? Sometimes the tradeoff of working with someone you despise at the expense of boosting their reputation is worth taking.

### Lumping different donations into one large group of bad actors is confusing and tribal.

In my book club, we recently read *King Leopold's Ghost*, a historical account of the much-forgotten genocide in the Congo, orchestrated almost single-handedly by King Leopold II at the turn of the 20th century. One of the protagonists, E. D. Morel, dedicates his life to stopping Leopold. In his efforts to gain support from the U.S. government to pressure the Belgian king, he allied

himself with a racist Southern Democrat who wanted black Americans to return to Africa. Morel ultimately got the U.S. to condemn Leopold's illegal regime. However, do the ends justify the means here? If working with racist Americans helps end genocide in another country, is that good?

In the case of Morel, the goal and the logic behind achieving that goal were clear and strightforward: end genocide in the Congo by leverging whoever you can to put pressure on Belgium. Even if "dark money" is inherently bad, there is no clear link between resignation of MIT leadership and positive change. This central demand by some is nonsensical. Instead, let's talk about what change we want and why. And then discuss how to make these changes. Reif's resignation would be nothing more than a hollow victory — winning the battle but losing the war.

Many of us are going to disagree on this issue. That's okay. It's not okay that disagreeing has become an excuse to avoid discussion and isolate ourselves in comfortable echo chambers. That is dangerous. Academia is the safe space for discussing ideas. It's where difficult conversations can happen, where we allow for mistakes, where we extend good faith to our strongest critics. If we don't do it here, then we are failing the nation and the world. However, as our higher education institutions become more politically orthodox, they are losing their stomachs for controversial debate. The bias is clearly towards the liberal left, and conservative voices are shrinking. This oversight in diversity of opinion will only hurt the liberal cause and slow our progress towards a more equitable world.

"He who knows only his own side of the case knows little of that." —John Stewart Mills

THURSDAY, OCTOBER 17, 2019 6 THE TECH

### **DOCUMENTARY REVIEW**

# Jim Allison and T-cells finally break through to the spotlight Nobel Laureate Jim Allison fights cancer and skepticism in Bill Haney's informative documentary By Liane Xu Max Krummel, a graduate research assistant under Jim Allison in the '90s, describes how immunology was not considered a science back then, comparing Allison's lab to a pirate ship. Tyler Jacks, the director of our own Koch Institute, recalls how he and his mainstream colleagues The documentary follows Allison's arduous path from his childhood in Alice, Texas to his Nobel Prize teremony early on before taking it back and following a generally chronological sequence. Much like Allison's real journey, the documentary jumps around and occasion.

how he and his mainstream colleagues once ignored Allison's immuno-oncology work. These are just two of many, many interviews with experts, journalists, and more detailing the intense skepticism facing Allison's work and Allison's hard-headed approach against it.

**★★★★☆** 

Jim Allison: Breakthrough

**Directed by Bill Haney** 

Screenplay by Bill Haney

Starring Jim Allison, **Woody Harrelson** 

Rated PG-13, Now **Playing** 

SARTSARTSARTSARTS

documentary jumps around and occasionally leaves you confused, but turns out to mostly make sense in the end. For instance, the middle of the film somewhat abruptly takes a break from Jim Allison to meet Sharon Belvin. Eventually, we find out that Belvin was diagnosed with melanoma and turned to a clinical trial of Ipilimumab, a drug developed from Allison's research, after chemotherapy and other drugs failed her. In one of the most heartwarming moments of the film, she remembers feeling overwhelmed meeting Allison in 2006 and tells us that she has been in remission ever

Among other things, director Bill Haney weaves intriguing personal aspects in with the science, which effectively enhances his unique multidimensional portrait of Jim Allison. First of all, the film opens with Allison playing the harmonica, an instrument that makes several reappearances, including one with Willie Nelson. We also learn about his personal connection to his research: his mother, two of his uncles, and his brother died from cancer. In an-



Jim Allison in Bill Haney's Breakthrough.

other tidbit, his clashes with those who tried to outlaw teaching evolution in public schools demonstrate his clear commitment to science.

Overall, Haney plays a bit of hopscotch, but in the end, he adequately paints a picture of who Jim Allison is: hard-headed, creative, passionate, and most importantly, someone

who values rigorous scientific experiments over convention and assumptions. It's an important and timeless lesson because we still need more pioneers like Allison: immuno-oncology doesn't work for everyone. T-cells were discovered while Allison was in college; who knows if something discovered today will be the next breakthrough?

### **VIDEO GAME REVIEW**

# Shoot, loot, repeat

Borderlands 3 delivers on its promise of over 'one billion guns'

By Matt Farejowicz

Borderlands 3 is a game with a big personality. From characters like Completely Sane Sid to locations like Big Dock Energy and all the way to items like Sellout or Big Pharma Shield, Borderlands 3 goes all out with its iconic immature sense of humor and its immense variety. Borderlands 3 (the fourth game in the series) is the latest in Gearbox Software's series under the looter shooter genre. As the genre name suggests, the game has players defeating enemies, completing missions, and collecting vast amounts of loot. Overall, Borderlands 3 reaches new heights in both looting and shooting but may be a little daunting for those unfamiliar with the genre and the series.

The game starts with minimal tutorial; instead, it opts to throw players into epic action sequences with large amounts of enemies sooner rather than later. This focus on action persists throughout the game, with the only true respite found on Sanctuary, the player's home base. Many new features and design choices support this action-oriented gameplay, such as one-press ammo purchasing and vehicle spawning, 3D maps with greater ease-ofuse, and a better fast-travel system, all allowing the player to stay in battle or get there faster when needed.

Borderlands 3 has a new story that builds off of the previous games. You find yourself as a Vault Hunter, someone in search of great treasure hidden away by ancient aliens. While knowledge of past campaigns is not strictly necessary to understand what happens in this game, certain character or event references might be

missed, and the magic that can come from old characters making a new appearance might be lost. In my opinion, the story focuses slightly too much on this nostalgia factor, sacrificing a deep level of depth and character development that the previous games achieved. Regardless, the jokes tossed around by the game's characters can be appreciated by new and old players alike. The game chooses to tell most of its story through audio logs or radio conversations that take place while the action is happening, contributing even more to the feeling of constant engagement. Players can choose to stop and listen to the lore, immersing themselves in the game world, or continue pushing through enemies, in order to get to higher levels and better loot

Borderlands 3 can be played cooperatively with others, though I opted for a solo experience. One thing the game does really well in this regard is making the player feel like a one-person army. Characters would often express their disbelief of your ability to accomplish a certain task, and then slowly shift their opinion as they witnessed you complete goal after goal. In turn, you are rewarded with new gear to make your character even more powerful.

This rotation of gear is another core mechanic of the game. As you defeat enemies, you will level up and acquire new skills and items. Sorting through endless weapons, shields, modifications, skills, and more can feel like another game in and of itself, allowing players to find a play-style that suits them best, if they are willing to invest the time. Here, Borderlands 3 introduces a new "item score" system that gives players a general sense of an item's strength, which may be useful for newer players. More experienced players can still compare the individual statistics of items and find the ones that have exactly what they need.



Borderlands 3

**Developed by Gearbox** Software

**Published by 2K Games** 

Available on PS4, Xbox One, and Windows

In terms of graphics, Borderlands 3 continues to make great use of the cel-shaded style that the Borderlands series is known for. This cartoonish style works well with the game's light-hearted humor and succeeds in setting Borderlands 3 apart from other modern games that focus on photorealism. Improvements to the game engine also mean new levels of detail in items, characters, and scenery. Put simply, it may not be the prettiest game of this generation, but it is definitely one of the most bold and colorful.

It is worth noting that Borderlands 3 does have a fair share of technical issues. I had to try out two different PCs and a vast array of settings in order to get the game to run smoothly and without crashing. Many players on internet forums reported similar incidents for all available platforms. These crashes can be immensely immersionbreaking and severely detract from the overall experience the game offers. Gearbox assures users that they are working on fixes for reported issues.

Borderlands 3 is an excellent installment in the Borderlands series and the looter shooter genre. By focusing on mechanics that enhance the action, the game offers a consistent engaging experience, and is able to throw a little bit of humor and story into the mix as well.



Post apocalyptic carnage returns in Borderlands 3.

### **DID YOUR MIT ESSAYS GET YOU IN?**

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# JENCE SCIENCE SCIENCE

### LAB SPOTLIGHT

# Navigating our cities

### Using technology to build smarter cities

### By Anushka Ray

With new advancements in technology and the abundance of data, we can better understand the interactions between people and their urban environments. As a result, improvements in urban planning can pave the way for more efficient and environmentally cleaner cities. Researchers at the MIT Senseable City Lab aim to predict and study these improvements from a critical point of view. As conducting research to learn about people's habits in their urban environment requires members of the lab to consider many diverse viewpoints, the Senseable City Lab is made up of a multidisciplinary team of designers, engineers, computer scientists, biologists, and social scientists. With this diversity of researchers comes a diversity of technologies being utilized in the lab. "Reflecting the diversity of the lab, and the urban issues, we use big data analysis, machine learning techniques, but also robotics and design," says the director of the lab, Professor Carlo Ratti.

The team collects and analyzes two types of data: opportunistic data and sensor data. Opportunistic data is always being produced from social media logs, cell phone calls, and WiFi connections. On the other hand, sensor data is collected through devices developed by the lab for the specific problem at hand. They've applied their sensors to prevalent environmental problems in urban areas, such as deploying sensors on garbage trucks to measure the air quality of cities. Additionally, they've integrated their sensors on small robots to collect waste water for analysis of the sewage system.

The research conducted at the Senseable City Lab has produced many exciting findings. For one, using the public data of the 150 million taxi trips that take place in New York, they found that only ten taxis cover a third of Manhattan's streets daily. "Thus, by attaching inexpensive sensors to crowd-sourced urban vehicles, we can capture hyper-local measurements across a large portion of a city," says Ratti. The lab has also utilized 50 million geo-tagged Weibo (a social media platform) checkins as a measurement of social activity in specific locations. By correlating this data with the daily pollutant records for 251 cities, the lab found that urban activities are uniquely affected by air pollution. "For instance, we found a greater effect on locals' activities [compared] to visitors and on locals' leisure activities compared to work activities," says Ratti.

In addition to these projects, Ratti's lab is currently working on two projects entitled "AI Station" and "Tasty Data." The "AI Station" is a collaboration with the Société Nationale des Chemins de Fer (SNCF) Gares & Connexions at the Gare de Lyon train station in Paris. This project studies the digital footprint that people leave in spaces to better understand passenger behavior, with the end goal of improving their experience at train stations. The data collected consisted of Wi-Fi information



The HubCab project revealed that only an average of 10 taxis cover a third of Manhattan's streets daily.

from the 100 million passengers that pass through the Gare de Lyon train station annually. The Wi-Fi data was used as a digital footprint to aid in understanding the behavior of passengers in train stations.

The "Tasty Data" project utilizes restaurant data to make predictions about local socioeconomic factors. Restaurant data included ratings, cuisine types, and more, and was provided by Dianping, the Chinese version of Yelp. The lab built a model that takes in this restaurant data and predicts factors like daytime and nighttime populations, company presence, and spending amounts. These predictions were calculated across 9 cities in China to compare their socioeconomic attributes.

In light of the increasing availability of globally representative data, Ratti is hopeful about the future of the lab; "As digital technologies are pervasive, as well as urbanization, we see the lab working more and more in problems that present global patterns — and this can help us to address urban problems that happen everywhere."



8 The Tech
Thursday, October 17, 2019

### Duflo is youngest person and second woman to win Nobel Memorial Prize in Economics

Nobel Prize, from Page 1

jee is the Ford Foundation International professor of economics. They are co-founders of the Abdul Latif Jameel Poverty Action Lab (J-PAL), a global research center with the goal of reducing poverty via scientific evidence.

At a press conference held at MIT Monday, President L. Rafael Reif said, "By providing an experimental basis for developmental economics, Professors Banerjee and Duflo have reimagined their field and profoundly changed how governments and agencies around the world intervene to help people in poverty."

"MIT economics is known for its combination of superb economic talent in a commitment to making a better world, and Abhijit and Esther stand as a wonderful example of both," Reif continued.

Duflo said at the press conference that being given the prize "is going to make it a little easier to penetrate the many doors that are half open to us or not quite open to us, and hopefully bring the message of 'policy based on evidence and hard thinking' to many other places as well."

"One could be a little bit more rigorous about what policies and what type of things can really help the poor," Duflo said. "It goes in designing policies ... based on a better understanding of how the poor live, why they make the choices they make, what are specific traps that

hold them back, and what lever to push that could unlock these traps."

"But one grows also by accepting the possibility that maybe you didn't get it right exactly the first time, and that innovating, experimenting is useful," Duflo continued.

Duflo also thanked the faculty and students of the economics department, specifically Bengt Holmström, who won the Nobel Memorial Prize in Economic Sciences in 2016, for seeing the potential of their research. She also thanked former MIT President Susan Hockfield for connecting them with donors, and Mohammed Jameel, who contributed several endowments to J-PAL.

Addressing the low proportion of women who have been Nobel Laureates and who pursue academic professions, Duflo said, "There are not enough women in the economic profession, at all levels. There are not enough undergraduates who choose to take economics. There are not enough graduate students who continue. There are not enough assistant professors. There are not enough tenured faculty."

"The reasons why there are so few women who get the Nobel Prize or other prizes is not because the people who give prizes are discriminating against women. It's because the entire funnel is just not big enough," Duflo continued. "And that's not true just for women, I should say. It's true also for minorities. There are not enough African-Americans in the econom-

ics profession, by any stretch of the imagination. In fact, it makes women look positively numerous, and that has to change."

Banerjee added that he takes pride "that our specific, little corner of economics, the field of development economics, has many more women than almost any other part of economics."

When asked where they were planning to take their work, Banerjee responded, "I think we hope that we'll get to do more of the same."

"This was not work that we did a long time ago. We're excited about what we're doing now," Banerjee explained. "We are learning new things. I'm really excited to look at the results from our latest intervention, so I think what I hope this will do is just open more opportunities to do more inventive things."

"I think maybe one thing that we have started to do," Duflo added, "is working with governments and working at scale with governments to help them evaluate both new approaches and also better ways to do things that they want to do anyways."

Two other MIT affiliates were awarded the Nobel Prize this year. John Goodenough, former researcher at the MIT Lincoln Lab, shared the prize in chemistry for developing the lithium-ion battery. Visiting scientist at the MIT Kavli Institute Didier Queloz shared the prize in physics for his discovery of the first known exoplanet orbiting a solar-like star.

### UA wants more student reps involved in Commencement discussions

Commencement, from Page 1

GSC was not directly involved in making this decision, advocacy by the GSC was a factor leading to the decision. Su wrote that there were "logistical constraints" which prevented changes to the 2020 commencement.

According to Su, the primary constraint for 2020 was that the ceremony for undergraduate and master's students could not be moved to Thursday. "For 2021, that constraint does not exist, so the GSC will have a greater ability to advocate for changes that benefit the MIT community."

Su wrote that the GSC will advocate for a 2021 commencement that better meets the needs of the graduate community, with the general principle being "to shorten the ceremony, while maintain-

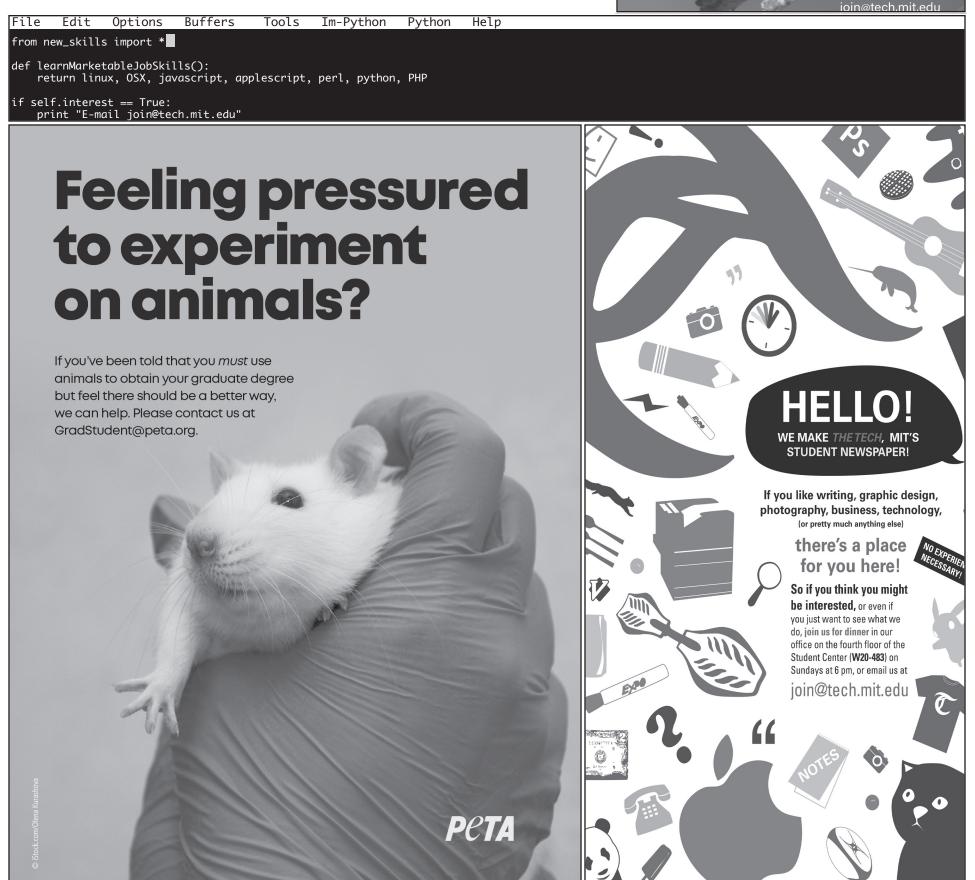
ing the quality and gravitas that the current ceremony offers to all students at MIT."

Elango wrote that the UA's position on future changes to Commencement involves a few key points. One is that student representatives from future graduating classes be included in discussions about Commencement and that the Commencement Committee "continue to engage the community in a transparent process."

The second point Elango emphasized was that an "overwhelming majority" of respondents to the UA survey prioritized receiving degrees as a class. The survey results will be sent out by the UA later this week, Elango wrote.

Students can send questions regarding the schedule for 2020 and the new committee to commencement@mit.edu.





# 

### **Apple**

Solution, page 12

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

Solution, page 12

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	6×		<b></b>	9+	

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.

# Pie Fillings by Mark McClain

Solution, page 12

### **ACROSS**

- 1 Catch sight of
- 5 Once owned
- 8 Make an escape 12 Very worrisome
- 13 Brewery creations
- 15 Migratory seabirds
- 17 Natural healer
- 18 Be less than candid
- 20 Cocoa-coffee blend
- 22 Arizona city 23 After-sunset time, in
- poems
- 24 Gung-ho
- 27 Offer a bet
- 29 Competition that makes a
- 32 Columbus campus: Abbr.
- 33 Edison's middle name
- 34 Artist Neiman
- 37 Floating ice mass
- 39 Local watering hole
- 41 Online auctioneer
- 43 Grinch guy 46 Skier's accessory

- 49 Three, in Sicily
- 50 Beatles' music label
- 53 Baby bottle contents 56 First Indian prime minister
- 57 Gobbled up
- 58 Inclined walkway
- 60 Desert haven
- 63 Round firecracker
- 67 TV room device
- 68 Fiddler on the Roof lead role
- 69 Sheriff badge shape
- 70 Elongated circle
- 71 Oboist's accessory
- 72 Hot tub 73 Western gambling center

### **DOWN**

- 1 Dutch cheese
- 2 Cylindrical farm building
- 3 Method of doing something
- 4 Cowpoke's "Hurray!"
- 5 Option for an omelet
- 6 Boxing legend 7 Refuse to approve

- 8 Second-largest city in IN 9 Astrological feline
  - 10 Made a blunder
  - 11 Drew to a close
  - 14 Long oar
  - 16 Former Medicare IDs
  - 19 Paperless messages
  - 21 Taj Mahal locale
  - 25 Slender swimmer
  - 26 Invitation abbreviation
  - 28 Fairy tale brute
  - 29 Unruly crowd
  - 30 Employs 31 Brownish gray

  - 35 Meddlesome
  - 36 Football measure
  - 38 American Pacific territory
  - 40 Brought into the world
  - 42 "Sure thing!"
  - 44 Goaded into action
  - 45 Spread apart
  - 47 Director Spike 48 Audible rebound
  - 51 Ewes' babies
  - 52 Skilled speaker
- 12 13 15 18 20 23 24 29 | 30 31 32 43 53 | 54 | 55 56 61 |62 58 60 65 | 66 70 68 69 73 72
- 53 True statement
  - 54 "Everything else" category
  - 55 Christopher of Superman
- 59 Stew cookers
- 61 Lendl of tennis
- 62 Tune for one
- 64 Diner loaf 65 Atlas illustration
- 66 Bathing suit top

# Four Day Weekend



a comic about life at the 'tvte









Meow. (F\*ck)

# FUNFUNFUNFUNFUNFUN

# Hayride

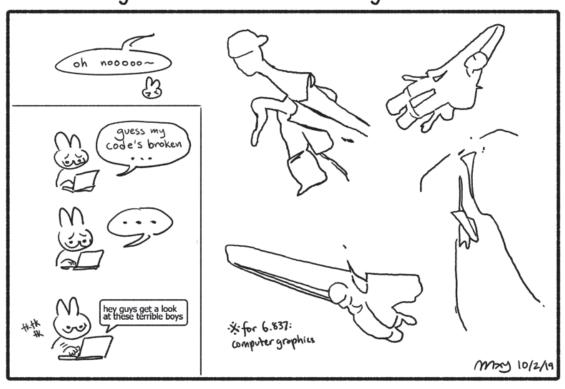
_		
Solution,	page	12

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

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.

## miscellany #2: monster factory





### **Donuts**

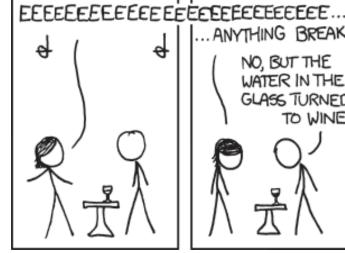
Solution, page 12

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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.

### [812] Glass











### **FOOTBALL**

# MIT Men's Football beats Maine Maritime comfortably

Team secures a 30-12 win over Maine Maritime

### By Suleman Thaniana

The match started off on the wrong foot for the Engineers as Reed Hopkins of Maine Maritime pulled in a touchdown pass from Nikolas Mouqin four minutes into the first quarter for the 0-6 lead. But MIT quickly tied the game with a seven yard touchdown by John Robertson '20, this was followed by an extra point from Mark Wright '21 to end the quarter at 7-6. The Engineers extended the lead to 20-6, credit to two touchdowns. The first one was a 25 yard touchdown pulled down by Mason DuMez '21 as he went up the middle while the second one was a 12 yard touchdown by Keithen Shepard '21, pulled down just inside the near pylon. Both passes were made by Chris Mauck '20. Maine Maritime made it a one score game at the start of the third quarter as Mouqin found Dominic Casale wide open in the middle of the end zone. The third quarter ended with a 33 yard field goal by Wright. The fourth quarter was dominated mainly by MIT as the game was sealed with

a 10 play 86 yard drive, which ended with a touchdown by Ashton Robinson '22.

Robertson dominated the stat board with a career high 263 yard rushing performance who later in an interview emphasised the role played by the team in helping him achieve this personal accolade, saying, "I just so happened to be the guy who shows up on the stat sheet but full credit goes to that [offensive] line." Other players with excellent performances for MIT include Mauck, who completed 8 passes including 2 touchdowns, and top reciever DuMez, with 48 yards. Subsequently, Sean Kent '20 took ahold of the MIT defense and filled the stat board with a career high 10 tackles. As an overall the team owned the possession race 35:24-24:36 and the number of offensive yards 440-213.

This victory brought the football team to a record of 3-2 overall and 2-1 in NEWMAC. The team now heads into a gap week which they wish to utilise to rest well and prepare for the next away game on Oct. 26 vs. the US Coast Guard Academy.



DEN VETTLE THE TE

MIT Football WR Keithen Shepard scores a touchdown in Saturday's win against Maine Maritime.

# 32. Take a stroll through Little Italy in the North End Join the Arts department at The Tech and write restaurant reviews. (And get reimbursed for your meal!)

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Central Square)
70A (North Waltham —

Central Square)

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# Solution to Apple from page 9

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

### Solution to Cider

from page 9

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

### Solution to Pie Fillings

Ε	S	Ρ	Υ		Н	Α	D			F	L	Е	Е	
D	I	R	Е		Α	L	Ε	S		T	Е		N	S
Α	L	0	Е		М	I	N	С	E	W	0	R	D	S
M	0	C	Н	Α			Υ		M	Α			Е	N
		Е	Α	G	Е	R		L	Α	Υ	0	D	D	S
M	U	D	W	R	Е	S		L	I	N	G			
0	S	U		Α	L	٧	Α		L	Ε	R	0	Υ	
В	Ε	R	G			Р	U	В			Е	В	Α	Υ
	S	Ε	U	S	S		Р	0	L	Е		Т	R	Ε
			Α	Р	Р	L	Ε	R	Е	С	0	R	D	S
F	0	R	М	U	L	Α		N	Е	Н	R	U		
Α	T	Е		R	Α	М	P			0	Α	S	I	S
С	Н	Е	R	R	Υ	В	0	М	В		Т	I	V	0
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	R	Ε	Е	D			S	Р	Α		R	Ε	N	0

### **Solution to Hayride**

from page

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

### **UPCOMING HOME EVENTS**

Friday, October 18

Women's Volleyball vs. Middlebury College 7:00 p.m.

Saturday, October 19

Crew: Head of the Charles All day Sailing: Oberg Trophy All day Men's Water Polo: Harvard University Invitational All day Rifle vs. U.S. Coast Guard Academy 9:00 a.m. Swimming and Diving Alumnae Meet 10:00 a.m. Women's Volleyball vs. Williams College 11:00 a.m. Men's Soccer vs. Clark University 1:00 p.m. Women's Volleyball vs. No. 13 Tufts University 3:30 p.m.

Sunday, October 20

Crew: Head of the Charles

Sailing: Oberg Trophy

Men's Water Polo: Harvard University Invitational

All day

All day

Tuesday, October 22

Field Hockey vs. Wellesley College 6:00 p.m

Wednesday, October 23

Men's Soccer vs. Worcester State University

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### Solution to Donuts from page 11



7:00 p.m

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