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Thursday, April 3, 2025

WEATHER, p. 2

THU: 60°F | 53°F Showers likely.

FRI: 63°F | 42°F Mostly cloudy.

SAT: 45°F | 39°F Showers likely.

Protesters hold "ICE Off Campus" rally on March 21

Richard Solomon: "We came out at this rally to reaffirm the demands of the student referendum"

By Vivian Hir and Alex Tang
EDITORS

On March 21, dozens gathered outside the steps of the Student Center to protest the arrest of Columbia University student Mahmoud Khalil and voice concerns regarding Immigration and Customs Enforcement (ICE) activities on college campuses. The rally was organized by the MIT Coalition for Palestine (C4P) and MIT Jews for Collective Liberation (JCL). Protesters also called for the Institute's administration to release an official statement affirming their support for the MIT community with regards to potential on-campus activities conducted by ICE.

In an email to *The Tech*, C4P spokesperson and graduate student Richard Solomon stated that the purpose of the rally was to protest ICE's deportation of students and raise awareness on recent developments within the MIT community. "We came out at this rally to reaffirm the demands of the student referendum to keep ICE and DHS (Department of Homeland Security) off campus," Solomon wrote. The referendum, which was adopted by the MIT Undergraduate Association, passed with 88.5% in favor. However, a mere 30.0% of the undergraduate student body cast a ballot, down from 35.7% in 2024.

On March 8, Mahmoud Khalil was arrested by ICE in New York City following the revocation of his student visa. Khalil, who graduated from Columbia University's School of International and Public Affairs in 2024, is a legal permanent resident of the United States and is married to an American citizen. Khalil was a

ICE Rally, Page 2

VIVIAN HIR—THE TECH

Graduate student Richard Solomon speaks at the ICE off-campus rally on the steps of the Student Center on Friday, March 21.

Undergrad Association releases 2025 election results

Student voter turnout decreases by 35.7%; referendum passes with 88.5% majority

PHOTO PROVIDED BY KATELYN HOWARD

Alice Hall '26 and Mariam Abdelbarr '27 have been elected as the UA's President and Vice President for the 2025-2026 academic year.

By Vivian Hir
NEWS EDITOR

On March 21, the Undergraduate Association (UA) Election Commission sent an email to the MIT undergraduate community with the 2025 UA Election results. This year's ballot included the UA President and Vice President, one referendum, and 2026-2028 Class Councils.

1,359 undergraduates voted in the election, constituting 30.0% of the student population. 2,112 undergraduate students voted in the 2024 election, meaning that this year's voter turnout decreased by 35.7%.

According to UA Election Commission Chair Diego Temkin '26, the significant decrease in voter turnout may have resulted from "the limited number of contested races and the tight deadline before spring break." The voting period for the 2025 UA Election began on March 17 at 8 a.m. and ended on March 21 at 5 p.m. Temkin said that the UA Election Commission is working on solutions to improve turnout and participation for future elections.

The referendum passed with 1,006 "Yes" votes and 131 "No" votes, which accounted for an overwhelming majority of 88.5%. This ballot measure called upon the MIT administration to "formally condemn the arrest" of Mahmoud Khalil and "publicly adopt a policy of non-collaboration with federal immigration enforcement agencies." Furthermore, the referendum called upon the MIT administration to "publicly affirm its support" for the freedom of on-campus political speech.

According to the UA Election Code, the conditions in the binding referendum become the "official opinion" of the UA, meaning that the UA must "honor the referendum's mandate to the best of its ability." In an email to *The Tech*, UA President Enoch Ellis '26 clarified that UA Officers have talked with senior administrative officers to honor the referendum's results. The MIT administration, however, is not required to fulfill the demands in the referendum, as stated in Chancellor Nobles' letter in 2024.

This year's UA presidential election was uncontested. UA Education Chair Alice Hall '26 was elected as President, and Mariam Abdelbarr '27 was elected as Vice President (VP). "We are both extremely excited and honored that we have been elected," Abdelbarr wrote in an email to *The Tech*. "Both of us are passionate about using our positions in a way that best serves the interests of the student body."

Comments and feedback for the UA elections can be sent to *ua-elect@mit.edu*.

Schneider discusses DoE and USAID cuts

Professor Schneider: "Longer term, USAID is a commitment in a moral sense"

By Sabine Chu
ASSOCIATE NEWS EDITOR

Ben Ross Schneider, Professor of Political Science and Director of the MIT-Chile Program, studies comparative politics, political economy, and Latin America. His recent research has focused on education reform in middle income nations.

On April 2, *The Tech* sat down with Professor Schneider to discuss the domestic and international implications of the Trump administration's cuts to governmental agencies, including the Department of Education and the United States Agency for International Development (USAID). The transcript has been edited lightly for clarity.

The Tech: **How might the Trump administration's cuts to the Department of Education affect K-12 learning and the broader United States political economy?**

Schneider: For the Department of Education, there are two issues that could be separated. There is the bigger political issue of the promise to do away with the Department of Education. This could just rearrange government administration: moving the Department of Education funding for students with disabilities over to Health and Human Services (HHS), student loans over to the Treasury. That would not af-

USAID Cuts, Page 3

IN SHORT

Fourth quarter Physical Education & Wellness classes begin on Wednesday, April 2.

The deadline for requesting Summer 2025 MEng entry is Tuesday, April 8.

The early deadline for requesting Fall 2025 MEng entry is Tuesday, April 8.

The last day to add half-term subjects offered in the second half of term (H4) is Friday, April 11.

The last day to change H4 subjects from listener to credit is Friday, April 11.

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

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

Hall & Abdelbarr: UA 2025-26 President & VP

Alice Hall: "It will be an honor to serve the best students in the world"

By Sabine Chu
ASSOCIATE NEWS EDITOR

Alice Hall '26 and Mariam Abdelbarr '27 will serve as the Undergraduate Association (UA) President and Vice President for the 2025-26 school year. Hall and Abdelbarr, whose platform can be found in an email from Diego Temkin '26, UA Election Commission Chair, received 1,088 out of 1,359 votes in an uncontested election. *The Tech* interviewed both students via email. Their responses have been edited lightly for clarity.

***TT*: Why did you run for UA?**

Hall: The UA isn't on everyone's radar. A year and a half ago, I was only vaguely aware of it. However, my roommate suggested that I apply to join UA Education via dormspam. Ever since then, I have grown more and more passionate about all the ways that we can focus our energy to improve the lives of students.

The UA is designed to have something for every undergrad, and if there is an initiative or idea students are passionate about being involved with or starting, that is something we want to fund.

The best way to increase visibility is with face-to-face conversation. I received the dormspam email, but I didn't read it until my roommate bumped it. I want to be President be-

Hall and Abdelbarr, Page 12

WOMEN'S SWIMMING AND DIVING

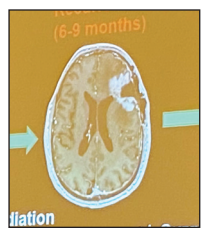
win national championship. **SPORTS, p. 9**

***HENRY V* (MIT'S VERSION)**

put on by the MIT Shakespeare Ensemble. **ARTS, p. 8**

PASSIONFRUIT AND GUAVA

AKA sudoku and kenken. **ENTERTAINMENT, p. 11**



GLIOBLASTOMA TUMOR MICROENVIRONMENT SYMPOSIUM

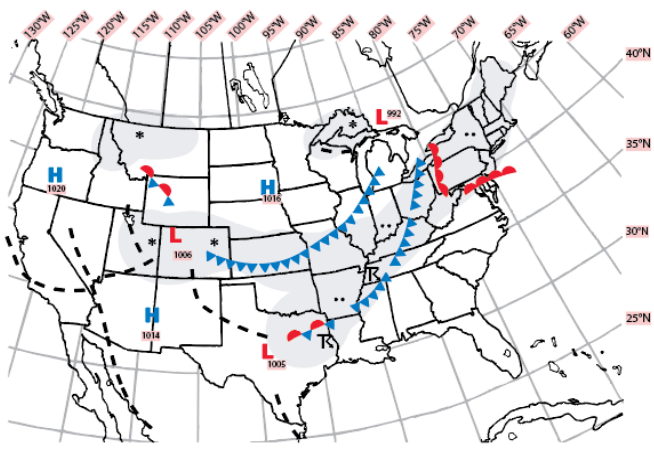
SCIENCE, p. 10

FINDING NEW CONNECTIONS

or maybe even the one. **CAMPUS LIFE, p. 4**

SECTIONS

WEATHER FORECAST



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

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

Other Symbols
Fog
Thunderstorm
Haze

Compiled by MIT Meteorology Staff and The Tech

A lukewarm welcome to April

By Lou Lahn
CHIEF METEOROLOGIST

April has finally arrived, and with it we're seeing several chances of rain in the next few days. It must be true what they say, that April showers bring May flowers. Some flower buds have already opened, but hopefully we have many more in store as spring comes to a head. Temperatures continue to be moderate and winds are breezy, so it's probably best to keep that jacket around for a while longer to fend off the chill.

APRIL 3
SITUATION FOR NOON (ET)

Extended Forecast

Today: Showers likely. High around 60°F (16°C). Southwest winds 15-20 mph, with gusts as high as 33 mph.

Tonight: Chance of showers. Low around 53°F (). Southwest winds 10-15 mph.

Friday: Mostly cloudy. High around 63°F (12°C). West wind 8-10 mph.

Saturday: Showers likely. High around 45°F (7°C) and low around 39°F (4°C). East wind around 11 mph.

Sunday: Showers likely. High around 57°F (14°C) and low around 46°F (8°C). Southwest wind around 10 mph.

Protesters condemn Khalil's deportation and visa revocation

ICE Rally, from Page 1

prominent face of the pro-Palestinian protests that took place on Columbia's campus last spring. At the time of publication, Khalil remains under custody in Louisiana.

Khalil's arrest came less than two months after the Trump Administration rescinded a 2021 memorandum from the Biden administration prohibiting ICE from operating in certain areas, including schools and hospitals. Now, ICE can enter public areas on college campuses without a warrant.

On March 19, the MIT Office of General Counsel (OGC) released a bulletin to advise the MIT community on possible interactions with ICE on campus. The bulletin states: "MIT's policy is to not provide information about members of the MIT community to immigration or law enforcement agents except with the consent of the individual." It stated that MIT Police " do not enforce federal immigration laws," but "generally will not assist in locating individuals who may be the subject of enforcement activities." The Institute also provided an update titled "MIT Protocol for Unannounced On-Site Visits by Immigration or Law Enforcement Agents," which was revised on March 26. According to the update, if an individual encounters immigration enforcement agents, one should direct them to MIT Police for assistance and contact the OGC at mitogc_immigration@mit.edu immediately.

At the rally on March 21, Solomon began with a speech condemning ICE's deportation of Khalil. "They're trying to deport him for his free speech," he said. Afterwards, he read excerpts of Khalil's letter released on March 18 about the targeting he received from Columbia and the Trump administration because of his role in the Palestine movement. Solomon concluded his speech by emphasizing, "We'll continue to say no to the suppression of free speech in solidarity of the Palestinian people."

Following Solomon's speech, Kai Juarez '26 read a speech on behalf of a person who wished to remain anonymous. In it, they urged the audience to have humanity and compassion for immigrants and "marginalized peoples," given that Khalil's deportation "will only be the beginning." The speech asked, "Do you think it would be worth it to carry along your entire life knowing that your fellow friend, family, colleague can be imprisoned at any time against their will, without due process, deported back to war and misery?" The speech argued that the audience should "fight for the rights of our immigrant friends" and the broader immigrant community.

Although the OGC and the administration have recently provided guidelines on the possibility of on-campus ICE deportations and immigration advice, Latino Cultural Center (LCC) President Ernesto Gomez '26 stated, "The administration has not issued a firm, public stance condemning the presence of ICE on campus or committing to tangible protections for affected students." In an organizational statement sent to *The Tech*, Gomez, speaking on behalf of the LCC, called for the Institute to commit to "non-cooperation with immigration enforcement actions." JCL member Isaac Gendler MCP '25 gave a speech defending Khalil, stating that Khalil's involvement in the Palestine movement resonated with Gendler's Ukrainian Jewish heritage. Khalil is the son of Palestinian refugees who grew up in a Syrian refugee camp. "The biggest lesson I learned from my Ukrainian Jewish history is to help other people fleeing persecution come into this country and make sure they're never kicked out," Gendler said.

Gendler criticized Columbia's complicity in allowing ICE to deport Khalil and the decision by ICE to revoke his green card by prosecuting him under the McCarran-Walter Act of 1952. Known as the Immigration and Naturalization Act of 1952 (INA), this legislation was established during the Cold War and used to justify racial and ethnic quotas. Gendler then mentioned that the same act was historically used to "kick out Jewish Holocaust refugees for 'subversive ideologies,'" these ideologies being communism. "These people claim that they're taking these actions to fight antisemitism," Gendler said. "How the hell can you fight antisemitism using an antisemitic law?"

In another speech, Professor of Linguistics Michel DeGraff condemned the arrest of Khalil as an "attack on all of us who dare to resist, who dare to speak truth to power." DeGraff stressed that he believed Khalil's reason for arrest was not because of a crime, but rather "because of his courage to speak out."

In an email to *The Tech*, DeGraff called for the protection of free speech and academic freedom, specifically for student and faculty members involved in the pro-Palestinian movement. "Let's also stand against attacks on free speech and academic freedom of students, staff and faculty like myself who dare speak about these linguistic trumperies that aid and abet Israel's genocide of Palestinians and the concomitant repression of anti-genocide voices in academia and beyond," he wrote.

Institute Office of Communications spokesperson Kimberly Allen wrote in an email to *The Tech* that MIT has provided resources for the community regarding legal guidance on interactions with ICE and international travel. Allen said that the Division of Student Life (DSL) and Office of the Vice Chancellor (OVC) staff are currently working to inform the community about these resources, in particular those who are most impacted by immigration and international travel.

"Our leaders are focused every day on doing their best for MIT," Allen said. "That includes affirming the incredible community of students and scholars from across the country and around the world who make up this extraordinary community." A spokesperson for the OGC did not respond to *The Tech*'s request for comment by the time of publication.

As of March 27, over 300 international students in the U.S. have had their student visas revoked, according to Secretary of State Marco Rubio's announcement at a press conference in Suriname. Rubio stated that the revocations stemmed from "harassing fellow students" and "going beyond demonstration." In the past month, several people involved in the Palestinian movement have been detained, including Georgetown University graduate student Badar Khan Suri on March 17 and Tufts University graduate student Rumeysa Ozturk on March 25.

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Schneider compares U.S. & Latin America's education systems

USAID Cuts, from Page 1

fect the outcomes of these programs much.

The other side of it, though, is the cuts to personnel and funding. Those could have a deeper impact, both in K-12 and university education. Cuts to personnel could delay programs that are supposed to channel resources to poorer students and poorer families, through Pell Grants for university students with lower family income, or Title I funds that go to schools in poor areas.

K-12 education is primarily funded by state and local governments. So about 10% comes from the federal government, but that 10% is going to lower income areas. If you have a poor municipality, then the funding per student is going to be much less.

***TT*: Are other countries pursuing large cuts of funding or personnel to education?**

Schneider: If anything, the trend globally is much more to increase spending on education. In the U.S. and also for other rich countries, you see a continuous increase in spending per student. Developing countries have also been trying to catch up in that sense. A lot of this trend is premised on the idea that you need more educated workers in order to compete in the global economy.

***TT*: Could other countries gain an advantage over the United States due to changes to education policy?**

Schneider: In most countries in Latin America and other middle income countries, the levels of education are well behind the U.S. American education might suffer if there are these large cuts, but I wouldn't expect that it would affect the overall functioning of the education system. There is an international example of international student assessment that is given across most rich countries and some developing countries. If you calculate the point difference, the middle income countries are about two years of education behind the U.S. That would take quite a while to catch up.

***TT*: How do teachers' unions play a role in national politics?**

Schneider: Teachers' unions in the U.S. have been critical of many of the moves of the Trump administration. They tend to be more important and more influential in the Democratic Party than the Republican, so they're in the opposition now. It doesn't seem like the federal government will be intervening in union negotiations at the local level. So I think that it will be more business as usual, whether or not teacher unions take the lead in opposing cuts to education or changes in the Department of Education.

***TT*: How can privatization affect countries' education systems?**

Schneider: The Trump administration has said they want to move in this direction, and certainly the previous Trump government wanted to promote this idea that you could take public funding at the local level and use it to go to a private school. And Latin America, in this case, does have a lot of relevant experience, particularly in Chile, where they moved to a full voucher system 45 years ago.

What that experience shows is that, to get the benefits of a full voucher system, you need very careful regulation. You need to say what students have to learn, how they've learned it, what kinds of organizations can offer schooling, can schools be for-profits or nonprofits.

***TT*: Has Chile effectively accomplished those regulations?**

Schneider: Yes, but it took 40 years to do this. They had a lot of problems starting out: the system wasn't regulated, schools were taking profits, they weren't competing. It took a lot of political effort afterwards to get the best regulations in place.

***TT*: How would the administrative needs for a U.S. voucher system compare to the current Department of Education?**

Schneider: I think that some people believe that if we have a private system, then that will reduce public or federal state intervention. I believe that it is the opposite, and it would require a great deal more administrative oversight and regulation to work.

***TT*: Could you expand upon the university system in some of the countries you've mentioned?**

Schneider: In general, in Latin America, there's been a huge increase in enrollment in university and higher education; depending on the country, much or most of it has come in the form of private universities. They're not funded in the way U.S. universities are on the research front, but rather through student loan programs, which have allowed a lot of private universities to start up, many of them of pretty low quality.

***TT*: How can student loans affect a country's workforce and economy?**

Schneider: On the workforce side, student loans allow many more students to go to university who would not be able to pay the tuition otherwise, so they greatly expand opportunities. However, the impact for the country and for many of the individuals depends on whether students with these new university degrees find commensurate employment.

And in this, there's been something of a mismatch, both in Latin America and in the United States. In strict economic terms, people are not getting the payout that they expected from this investment. But on the whole, I think it's been positive for Latin America and for the U.S. that many more people have gone to university and can then bring that expertise to their jobs.

***TT*: Transitioning to the USAID cuts, what general impacts do you think these changes could have across the globe?**

Schneider: In USAID, the indications are all of the agency's personnel and programs will be terminated. This is very different from the Department of Education. USAID's major programs include work on corruption, transparency, democratic governance, humanitarian assistance, which is mostly disaster relief, and global health.

In terms of magnitude, it's a very small part of the total U.S. government budget, less than 1%. It's also mostly focused on areas of primary concern to U.S. foreign policy. USAID cannot solve all global problems, and it's almost a drop in the bucket of the resources that are really needed.

But longer term, USAID is a commitment in a moral sense. It shows that a government like the United States is concerned about global poverty and thinks it can share some of its abundance of resources with countries who lack those resources to tackle these issues of disaster relief or infectious disease and so forth.

There's also a directly political side, which is to cultivate goodwill towards the United States. In this case, I think it has succeeded in that most people in most developing countries don't know what USAID is, but the ones that do have a generally positive view of the U.S.

***TT*: From a democratization standpoint, what does it mean for USAID to be cut?**

Schneider: USAID mostly funds civil society organizations in other countries that have an agenda of transparency and democratic governance. There may be some countries where it would be a really significant presence, but otherwise, I don't think it'll have a determinative effect. Civil society requires strong domestic support, primarily, and the international support is on the margins.

***TT*: How might the Trump administration's protectionist approach to tariffs affect U.S. and international politics and economics in the short and long terms?**

Schneider: So far, Trump seems perfectly willing to negotiate with Canada and especially Mexico. If he just went ahead with straight tariffs, it would have a pretty devastating effect on the economy, mostly for Mexico. 80% or more of the exports from Mexico globally go to the United States. To have those exports severely impacted would ripple through the entire economy.

When it comes to produce, there's a huge farming sector that's devoted to exporting to the United States, as well as industrial automobiles, electronics, and the manufacturing sector. If those were disrupted, especially the supply chains and automobiles, that would really impact the Mexican economy.

***TT*: How might these tariffs affect international relations between the United States and Mexico, as well as other countries?**

Schneider: I think in Mexico, like many countries, is saying, "Well, if we can't count on the U.S. market and we don't have stable trading rules, then we need to reduce our dependence on the United States and work with other countries." Given the structure of the Mexican economy, which is trying to produce goods at a lower cost for companies in rich countries, Mexico would start to look much more at Europe and other rich countries. Integrating with these economies would be complicated by transport and logistical issues. So replacing the United States is not a short term possibility. It would take years to figure that out and involve many different export products.

***TT*: What other countries in history or the modern day have pursued similarly protectionist policies?**

Schneider: It's been an issue in Latin America. For much of the 20th century, many economies in Latin America were very closed in an effort to say, "We want to develop our own industries and not compete worldwide until they're sufficiently strong to do so." So they developed an auto industry and other manufacturing industries.

Then, in the 1990s, there was a very strong push by the U.S. government and by international development agencies, like the World Bank and the International Monetary Fund, to free up those markets and reduce barriers to trade. Almost all of Latin America decreased their tariffs from 100 or 200% down to less than 10%. Some countries, like Brazil, still have some more protection of particular sectors. In general, it's now a very open continent for free trade. A lot of them are thinking, "We followed the guidance of the U.S. government and these agencies to open our economies, and now the United States is closing it."

***TT*: Are there any bodies that would have strength to compel the United States to open up the economy if it ever became that protectionist?**

Schneider: Latin America is far more dependent on these kinds of agencies, and particularly in the 90s, when they had difficulties financing international accounts. I wouldn't look for pressure from international bodies to have much impact in the United States.

In memoriam: David Schmittlein, longest-serving dean of the Sloan School of Management

David Schmittlein, the Professor of Marketing and longest-serving dean in the history of the MIT Sloan School of Management, died on March 13 at the age of 69. Schmittlein was Dean from 2007 to 2024 and was at the helm of the Sloan School's rise to its current status as one of the world's most eminent business programs.

MIT Professor of Finance Andrew Lo said in a statement to MIT News that Schmittlein offered the Sloan School "the opportunity to define ourselves in ways that we weren't doing prior to his joining." In an email to the MIT community, President Sally Kornbluth wrote that in addition to improving the educational opportunities at Sloan, Schmittlein's "wise, funny, judicious counsel left a lasting impression."

A longtime Bay Stater, Schmittlein grew up in Northampton, Massachusetts. He came to MIT after 27 years at the Wharton School of the University of Pennsylvania, where he was the Ira A. Lipman Professor of Marketing and Deputy Dean. Schmittlein earned a BA in mathematics from Brown University, as well as a MPhil in business and a PhD in marketing from Columbia University.

Schmittlein is survived by his wife Barbara Bickart, an Associate Professor of Marketing at the Questrom School of Business at Boston University. He is also survived by his children and extended family. According to Kornbluth and MIT News, a celebration of Schmittlein's life will be held by MIT Sloan. Details have yet to be released.

—Alex Tang

ADVICE

Making New Connections

Finding the "friends" in "friends-to-lovers"

By Auntie Matter

As a first-year girl, I have been feeling really single watching all the upperclassmen couples and hearing about high school sweethearts. However, since my past relationship has been toxic, I am really careful and want to become good friends with someone before I decide if I want something more. So my goal is to meet and to become friends with many new people before I find 'the one.'

But after FPOP and orientation, I have found it extremely difficult to expand beyond the bubble of people that I already know, and I have been afraid of going out of my way to meet new people. I feel that it is now awkward to sit down with a stranger and introduce myself because it isn't the beginning of the school year anymore where everyone is excited to meet someone new. And this is very difficult with guys because I don't want to give the wrong idea.

- Single in Distress

Dear Single in Distress,

I hear you! All the lovebirds flocking around campus could make even the stoniest of hearts crave the warm, fuzzy feeling of comfort that a relationship seems to bring. Your mindset for approaching relationships is a great one, though! Becoming friends with someone is one of the best ways — if not the best way — to get a read on their character, beliefs, and compatibility with you.

All this being said, it's definitely difficult to befriend new people if you're struggling to meet them, and it's even harder if you're nervous about the other person misunderstanding your intentions. I'd encourage you to embrace this awkwardness; although the rush of meeting people (think CPW or REX) has long since passed, this doesn't mean that they're not open to new friendships.

In fact, I'd venture to say that there are probably tons of people out there just like you — they have a little bubble of people they enjoy being around, but would love to find new connections across campus. So, next time you spot someone in the Stud who's wearing a sweater you absolutely adore, or who has a sticker on their computer of a character from your favorite show, maybe tap them on the shoulder and let them know! A simple "Can I sit here?" followed by a "I love your jacket by the way — where did you get it?" could be the start of a new friendship.

The people you approach don't have to be strangers, either. You've probably heard this many times, but I'll say it again: classes are a great way to meet new people! Even in a huge lecture, it's a lot easier to strike up a conversation with your classmate than to approach a stranger in a dining hall. For example, you could talk about the last pset or ask for clarification on what the professor wrote on the blackboard.

You seem worried about approaching guys and being misjudged. This can be tough, especially if you don't necessarily want to start these friendships with romantic intentions. Depending on the person and the situation, a genuine friendship could still bloom despite initial misunderstandings. If you find yourself getting closer to a guy, and you're still not certain whether your relationship is platonic, don't be afraid to directly clarify this with him! Chances are, if your ideas differ, it'll reduce down to an awkward laugh. If he reacts badly, though, then maybe it's time to reconsider if this is someone you want as a friend.

However, your feelings should always take priority in these situations. If you don't feel safe or comfortable approaching unfamiliar guys, don't force yourself to do so! Instead, approach people you are comfortable around. And maybe, down the line, a friend will introduce you to one of their friends — this could make the meeting feel more organic.

Finally, and most importantly, the lovebirds on campus may be happy, but you don't need to be a lovebird to find joy in life. I promise that you will find people in your life — friends, family, and other people who care about you — who are ready to give you love and support. Platonic relationships can't replace romantic ones and vice versa, but hopefully they alleviate your "distress."

Wishing you all the luck in your journey to find new connections,

Auntie Matter

Playboi Carti's newest release, *MUSIC*, isn't an adequate apology for "the wait"

Carti's homogenous sound and lyrical dullness make for a less-than-inspired record

MUSIC - SORRY 4 DA WAIT

Playboi Carti

AWGE and Interscope Records

March 25, 2025

By Alex Tang and Sabine Chu

EDITOR-AT-LARGE AND ASSOCIATE NEWS EDITOR

On March 14, Playboi Carti released *MUSIC*, his long-awaited third album. Below, Alex and Sabine attempt to make their way through the 30-song tracklist, plus the four bonus tracks on March 25's *MUSIC - SORRY 4 DA WAIT*.

ALT: It was maybe in the spring of 2021 when I heard a Carti song for the first time. Foreign. Punchy, vivacious, quintessentially dying lit. I ended up enjoying many of the *Die Lit* and *Playboi Carti* tracks. Only after that did I find some of *Whole Lotta Red* (WLR). It carries an enveloping presence, perhaps one that is too gentle. It embodies cacophony and angst: the sound, or perhaps the noise, awakens the beast inside all of us. When I needed it, it was stronger than any surge of adrenaline.

As heterogeneous and brilliant as *WLR* was, the way Carti floated on *Die Lit* was something I wanted to hear more of. I explored some of his fan-made music (pretty good, in fact) and Version 1 of *WLR* (leaks that were also solid). I even went back to his SoundCloud and Cash Carti phases. Evolution is an understatement when it comes to Carti, so I wanted to hear the beginnings of it all.

"2024" dropped in 2023 and heralded a new Carti. It was nice, the forays into tonal inflections enriched by a strong instrumental backing. However, I didn't enjoy the other tapes that were released in the later weeks. "Timeless," now plastered on every corner of the internet, was pretty darn good, but again, The Weeknd has stellar production capabilities.

MUSIC dropping on Pi Day was pretty hilarious. I did lose a little sleep waiting, but I was hardly surprised when Carti delayed the release.

SRC: One thing about me is that I LOVE *Whole Lotta Red*. "Control" was my most-listened to song of 2024 by... I don't want to say how many listens. During the Cambridge Half Marathon, I obviously had to listen to *WLR*. Well, I put it on for the first half, then my phone dropped to 5%. So I had to sing "King Vamp" in my head over and over for the last seven miles. When it came time to post an obligatory race picture, I used "Stop Breathing" as the background music.

So you can imagine how excited I was to listen to *MUSIC* — and how disgruntled I was to find, in the words of my friend Richard, that it was largely "whole lotta mid," despite a few sublime moments. Like Track 11 on *Whole Lotta Red*, *MUSIC* is "Meh." Even the four added tracks on *MUSIC - SORRY 4 DA WAIT* couldn't save my disappointment.

POP OUT

ALT: To make a horrible analogy, this is a quantum particle in a box trying to leave the box. It's trying to break the rules. It's so entropic and jarring, but it's classic Carti at this point. One could consider this to be an extension of the concepts on *WLR*: the angst and the monosyllabic lyrics are just daggers. We'll see how it climbs or falls from here.

SRC: SEEYUH! Okay, basically everyone I talked to agrees that this song is the highlight of the album — which is a bad sign for the opener on a 30-song record, but great news for anyone with 2 minutes and 41 seconds to spare. The intro is quite enjoyable (hi, Swamp Izzo), and throughout the song, Carti brings the energy. His raspy intonation perfectly fits the aggressive, characteristically outrageous lyrics. This dude loves vampires, cool cars, and making incomprehensible noises over and over again. And you know what? So do we.

CRUSH (with Travis Scott)

ALT: Travis and Carti is not a combination that typically misses. Sadly, this one falls a little short. The repetition doesn't feel invigorating in any sense, and the lyrics raise some ironies. In God We Trust? Antithetical to the demonic Carti persona he's cultivated lately. This song sounds like a rough draft. A pilot. A work in progress.

SRC: I wonder what shawty's going to let them do — the song was kind of ambiguous. I wish there had been another repeat of that titular lyric to clear things up! Just kidding. On a musical basis, I like this song; the electronic style is nicely floaty. On a feminist basis? Not so much.

K POP

ALT: Yeah, I think I just wasted two minutes of my life right there. To be honest, this was the background noise as I tried to turn on another monitor. RIP.

SRC: Jordan Terrell Carter is not known for the ingenuity of his lyrics. This chorus-free, 112-second track doesn't exactly change my opinion of him on that front.

EVIL J0RDAN

ALT: What is that gunshot? The build-up was totally reasonable and then you just empty the chamber? Evil. The instrumental is the wave, and Carti rides it with his custom surfboard. It's pretty decent. To be honest, this came out last year, so this is not my first listen.

SRC: I liked "EVIL J0RDAN." In my opinion, Carti's idiosyncratic accent is one of the best parts of his music. His exaggerated vowels on "syrup" (or was it "zero"?) make up for the fact that he says the word four times, or precedes the line with "I'm an emo thug in my phase." I also enjoy the little pauses between lines.

MOJO JOJO

ALT: Kendrick said extraterrestrial? Not to get derailed, but that was hands down one of Future's best projects (Project E. T.). That album sent me to space. Carti stays on Earth with this one, though. Kendrick is a feeble attempt to enter low orbit, but to be fair, this song is far from something stratospherically good. There are ephemeral moments of a decent flow from Carti's end, but then it drops off. The instrumental is mediocre. Not much mojo in this one.

SRC: I first listened to "MOJO JOJO" on the radio of some Uber that was speeding through Boston to Harvard Square in the early morning. Did Kendrick, possibly the best lyricist in contemporary rap, need to be on a song that rhymed "window, woah" with "window, ho"? Let's not talk about it. Instead, we can focus on the beats, which are simple but smooth and classic. They get the job done, just like the obligatory villainous metaphor and the random chorus.

PHILLY (with Travis Scott)

ALT: Vintage. Travis is back. Maybe I am a sucker for 808s, but it's sublime here. Carti is a bit unsteady, but it doesn't hurt too much. Also, the mixing sounds off? The volume seemed to oscillate a few times. Nonetheless, this one will end up on loop. Probably because of the instrumental.

SRC: The sound on this is great. Between the vocals and the beats, the song purrs like the Bentley that they shout out. I think Carti and Travis did a better job of combining their styles here than on "CRUSH."

RADAR

ALT: Metro! No Pierre Bourne thus far, which makes me sad because Pierre is Carti and Carti is Pierre. But this is the flamboyance and flashiness of Metro fused with the rasping and ranting of Carti. It's alright.

SRC: I did interval training on the bridge to this song. Did you know 60 smoots are about 100 meters? Overall, I found this track pretty enjoyable — nothing to write home about, but good to run home to.

RATHER LIE (with The Weeknd)

ALT: I hated The Weeknd until "Timeless." I wanted to become a fan, but this one kind of starts out too canonically Weeknd, the Weeknd I grew up hating. It's trying to be profound, just like when I try to use metaphors in my writing and it falls so flat that everyone becomes a hater. Carti is trying to be lyrical here, but perhaps Mr. Carter should realize that this was not a step below "Timeless," it's a whole couple of floors below it. I'd rather not lie about taking an elevator between these tiers.

SRC: I find The Weeknd so insanely annoying. He has the unique ability to make almost any song worse, even when he's collaborating with undeniably great artists. (FKA twigs, Lana Del Rey, and I could go on.) To Carti, another great, I say: this is not "Control"! The people (me) want "Control"! You're more romantic when no one can understand what you're saying!

FINE SHIT

ALT: This one is decent. The instrumental is nice, but the lyrics are plain. It might be one of the lighter songs here, and I'm actually pleased this works. It's almost like an interlude.

SRC: Boring, sorry. Could have been cut and I would not have cared. Good to know he can spell DIE, though.

BACKD00R (feat. Kendrick Lamar & Jhené Aiko)

ALT: A very loaded resume on the features on this album. And here, Kendrick is better than he was earlier. Big-time loop potential. It's honestly like an unclouded sunrise after a rainy day. It's good.

SRC: This track has grown on me. Jhené Aiko's inclusion makes "BACKD00R" much more melodic than the other Kendrick features. Chill song, chill flow, chill beats.

TOXIC (with Skepta)

ALT: Does anyone not hear an air-raid siren in the background? Too jarring. It's an E and F dissonance. As a former violinist who sucked at double stops, it's soft enough to not hurt, but it still irks me a bit too much. My ears are ringing. Next.

SRC: I cannot take Skepta seriously. *This* is a "leader"? A "genius"? The line about "your boyfriend" being "a follower" just made me think about that meme that reads "when you gon stop eating shrimp with the wimps." The alternative no one's talking about: put down the seafood and this lame track.

MUNYUN

ALT: Swamp Izzo aside, this instrumental sounds like the younger brother of "PHILLY." There's so much untapped potential for a flow on this, and it lasts for like a maximum of 15 seconds. And Swamp Izzo, your tag is about as good as Sports Illustrated articles. Rethink the tag brother.

SRC: Swamp Izzo: he's lowkey featured on this record! I feel like it's not a great sign that in all these song reviews, I keep mentioning the features or producers instead of, you know, Carti himself. The arrhythmic flow is annoying, not innovative.

CRANK

ALT: Can Swamp just shut up and cook up his instrumentals? Minus him, this is alright. An attempt to mimic some *WLR*-esque sounds, but this is a free throw that's a straight brick.

SRC: I like this song! Carti does brio like almost no one else. He sounds genuinely *happy* on "CRANK," and this elation makes lyrically lazy lines like "my vibes are top floors" sing.

CHARGE DEM HOES A FEE (with Future & Travis Scott)

ALT: Future carried this. That's it, that's all. Thank you very much. I'm sure Pluto charged an astronomical fee for this one.

SRC: Future sounds sleepy, but somehow he dominates this track. Carti doesn't really play a role here beyond making his noises.

GOOD CREDIT (with Kendrick Lamar)

ALT: This is Kendrick's song, not Carti's. The evil twin repetition is... interesting. Kendrick isn't an evil twin, he's a dark horse, a disruptor, a man who pops out and shows them what's up. Give credit to Kendrick for not making this track a straight-up skip.

SRC: As with the previous track, the featured artist both outclasses Carti and underperforms. Kendrick's voice is whiny. Why should I care if they're evil twins? Is this a continuation of the Powerpuff Girls motif from "MOJO JOJO?" Who's the last triplet? No one can say, but King Kunta seems strangely petulant.

I SEEEEEE YOU BABY BOI

ALT: Angelic instrumental and intro, but the vocals don't come even close to doing it justice. Carti is too passive. It could be more aggressive, more punchy, more physical. The theme of the album is coming into the limelight — it's not I am Music, it's I am Potential.

SRC: I liked the intro, and the thrumming instrumentals and beat remain the high points of the song. Carti's rapping left much to be desired, though. At some point, it felt like he was repeating himself because he ran out of thoughts.

WAKE UP F1LTHY (with Travis Scott)

ALT: The beat sounds like something off *Heroes and Villains* (produced by Metro Boomin), but I can't believe the vocals are somehow not making me feel anything. I was expecting something along the lines of "Rockstar Made," and this came up woefully short. I should readjust my expectations.

SRC: As I reviewed this album across various coffee shops, student lounges, and campus benches, I often found myself embarrassed to Google the lyrics in public. This humiliation reached its apex with "WAKE UP F1LTHY." Suffice to say, this song lives up to its title's final word.

JUMPIN (with Lil Uzi Vert)

ALT: Too short. It's Lil Uzi Vert, the co-author of the all-time classic "Shoota." It falls short, again.

Album Review, Page 6

"Music" is Carti's first album since 2020: does it make the cut?

Album Review, from Page 5

SRC: Were they too busy on the PlayStation? I wish this song was longer; 92 seconds isn't enough for either artist to perform at their proper, braggadocious heights.

TRIM (with Future)

ALT: Future carries once again. Maybe I'm noticing this a bit late, but it feels like Carti is cramming syllables in an attempt to stay in time with the instrumental. Two syllables can't become one, especially when you're coming right after Future. The cadence on Carti's end feels like an abnormal EKG. Perhaps that's the whole point of this album.

SRC: I like this one! A very solid track. Nice instrumentals, nice flow. They both sound relaxed but disciplined. The beat's strong enough that you can imagine yourself slowly dancing at your computer while typing along to this song. Or, like, just dancing, I guess.

COCAINE NOSE

ALT: This is the closest to *WLR* in terms of sound. Despite what Sabine says below, I honestly don't think it's that bad. It's neither a skip or a loop. It reminds you that Carti is capable of this sound; he's just choosing to make it the foreground rather than the centerpiece.

SRC: This song feels like *WLR* B-roll. Despite the title and his best attempts at a menacing rasp, Carti's not particularly euphoric. He may be sniffling, but this song sounds like it's from a bad cold.

WE NEED ALL DA VIBES (with Young Thug & Ty Dolla $ign)

ALT: Thugger's back after a hiatus with the law. He's ok. The overall vibe is like a summer beach song. Blast it out of a portable speaker or something like that.

SRC: I certainly hope these are not *all* "da vibes." If they are, then this song, which ChatGPT could have made, is what your 18.100A grader might call "necessary, but not sufficient."

OLYMPIAN

ALT: The mixing feels off. This should be the last song of the album; it's giving closing up shop vibes. The instrumental deserves so much better.

SRC: Even the initial "seeyuh" is muted. Carti's quiet here — more human than Herculean, much less godly — and the whirring background can't save him.

OPM BABI

ALT: This is a skip. I'm sorry if I hurt anybody's feelings. Next, please.

SRC: Swamp again? The crashes in the background seem random, as does the outro. Despite the attempted pyrotechnics, this track's a snooze.

TWIN TRIM (with Lil Uzi Vert)

ALT: 33% of this song is its intro. Hilarious. Lil Uzi is flamboyant, but I feel like he could have taken the vocal progressions in directions more like his true self. Perhaps he needed to be more Carti-esque and monotonal to get a solo work on this album?

SRC: Lil Uzi Vert does a great impression of himself here, by which I mean that this song does not belong on an album allegedly belonging to Playboi Carti.

LIKE WEEZY

ALT: If there's a meme on the album, this is it. I don't know what I was listening to. I will defer commentary to Sabine.

SRC: I can't pinpoint exactly why I like this song — it's definitely not the line "I'm big like Bieber" — but I suspect it may have something to do with the instrumental vortices swirling around Carti's upbeat flow.

DIS 1 GOT IT

ALT: This sounds mainstream, and because I possess truly poor music taste, I like it. Up there in loop potential, but nothing extraordinary.

SRC: I think that the averagely competent listener should be able to distinguish between a chorus and a verse in an averagely competent artist's work. Here, I cannot — not sure if that's a judgment of me or Carti.

WALK

ALT: The flow here is very Future-esque, which is pleasing. On the contrary, I'm irritated by Swamp Izzo's crap. He's being paid big bucks to shout into a mic. Well, it's not like Carti isn't being paid bigger bucks to do the same thing either. Who knows.

SRC: "WALK" is another short song, clocking in at just over 90 seconds. It's certainly not a standout, but Swamp Izzo's outro is enjoyable.

HBA

ALT: HBA leaked last year, and I'm not really sure if this version is any better. The snares are very metallic and bitter. Have you tried smelling what the handles to the nice Lobby 7 doors are like? That's kind of like what the instrumental sounds like here.

SRC: Appropriately for a track whose outro shouts out his children, Carti sounds strangely grown up. Although he indulges in the usual rasps and screeches — after all, as he "told 'em," he's "comin' normal" — our favorite vampire also takes his sweet time between lines, giving his words an uncharacteristically adult weight. (Also, Alex, why are you smelling door handles?!?!)

OVERLY

ALT: Very mid. Cruising altitude type of song. You don't need to pay attention to this one.

SRC: Another SVJ mention, another "chorus" that only appears once, another sub-two minute song. Kill your darlings, king.

SOUTH ATLANTA BABY

ALT: Not a bad ending to the original 30-song album. As you can read, I'm so burnt out from listening that I can't even form proper sentences. My ears hear things, yet my mind is empty. It's alright. It's alright.

SRC: This is vintage Carti. He's loose, fun, swinging from line to line. I like the background vocals and the instrumentals too.

DIFFERENT DAY

ALT: The instrumental captures you in place, in neither a good or a bad way. Carti's voice is somewhat bland. Not a skip or a loop.

SRC: Carti's sighing baby voice works in "DIFFERENT DAY," unlike many other songs. The simple, pulsing instrumental combines with his conversational tone to justify the less-than-inspired lyrics.

2024

ALT: Yes, this one's good. There's actual synergy between the instrumental and lyrics. I've heard this enough times that it's somehow nostalgic. What a weird thing to be saying.

SRC: Once again, a song is carried by Carti's talent for saying words in a unique way. I'm a particular fan of the sibilance of "news," then "something" and "wassup" in the chorus of "2024."

BACKR00MS (with Travis Scott)

ALT: Not the type of thing I would listen to. It came out a year or more ago, too. Not sure what to feel about this other than as an apology for leaving us fans in agony.

SRC: Shoutout to Carti's grandmother and... body positivity? I don't think lyrical analysis will prove particularly fruitful here. Anyways, fun song, but nothing groundbreaking.

FOMDJ

ALT: A very solid track. I enjoyed it.

SRC: Another track that made me go, "Well, that was a good song, and it seemed to be by Playboi Carti," and nothing else. If "FOMDJ" hadn't been the 34th song on the deluxe record, maybe I'd have been more generous. Most of the time, though, I doubt that I'll make it all the way through the album and let myself appreciate this track's merits.

Final Verdict

ALT: The homogeneity of sound on this album made it noisy. The sheer quantity of songs contributed to the noise; it was hard to distill the highlights. I'm not sure why this project took essentially five years when some tracks felt unpolished. In the future, I'll only want to sample individual bites at best and not devour the full meal. There are fleeting moments of greatness, but the chord progressions fall flat, Carti's arrhythmic rasping limped along far from anything lyrical, and the overall composition of the album was rather entropic. 6/10 because it might grow on me, we'll see.

SRC: I'm a harsh critic. Did I enjoy some of the songs on this album? Yes. But did it work as *an album* that I'd want to listen to in full? No way. After five years, you'd think the self-accused King Vamp would have experienced some bouts of insomniac creativity, but *MUSIC* is nothing new. I'm granting it a 4/10, though like Alex, I'll keep listening. Hopefully, the next record will prioritize innovative quality over quantity.

PHOTO COURTESY OF AWGE AND INTERSCOPE RECORDS

Music is Playboi Carti's latest album and his first release in five years since Whole Lotta Red.

BOOK REVIEW

Innovation in Isolation: the highlights of Ukrainian technology history

The book *Innovation in Isolation: The Story of Ukrainian IT from the 1940s to the Present* chronicles the miraculous development of Ukrainian computer science

Innovation in Isolation: The Story of Ukrainian IT from the 1940s to the Present

Volodymyr Nevzorov and Victoria Ugryumova

MacPaw Inc.

March 4, 2025

By Veronika Moroz
SCIENCE EDITOR

Kyiv, 1947– the government of the Union of SoKyiv, 1947 — the government of the Union of Soviet Socialist Republics (USSR) tasks a team of researchers, led by Sergey Lebedev, with developing an electronic computing model so their country can keep up with the United States' computing-enhanced defense system. With their city in shambles from three years of Nazi air raids, the best makeshift laboratory gets so hot that the machine room reaches over 100 degrees Fahrenheit — in the winter and with the windows open. None of the researchers have any experience building computers, and reading a Western journal could land them 10 to 15 years of imprisonment in Soviet labor camps under espionage charges. The only knowledge they have is that such a computer exists in the West, and that they need to build it.

And somehow, they do.

In their book, *Innovation in Isolation: The Story of Ukrainian IT from the 1940s to the Present*, Volodymyr Nevzorov and Victoria Ugryumova analogize, "For many years, the [Soviet Union's Communist] Party line was that computer science, or cybernetics, was a 'bourgeois pseudoscience.' In their quest to uphold 'true communism,' Soviet leaders essentially asked their scientists to build a computer with their hands tied behind their backs." Published in the context of the Russian invasion of Ukraine, this book traces the miraculous rise of Ukrainian information technology (IT) to "tell the story of the scientists who strove to make life in the USSR a bit better, in defiance of numerous material, technical, ideological, and political barriers."

Ukraine was the "beating heart of cybernetics in the USSR," Nevzorov and Ugryumova argue. Their claim embeds their book in a growing movement of de-Russification, re-emphasizing a narrative of Ukrainian individuality that has been buried under centuries of Russian and Soviet propaganda. The movement, which extends from Ukrainian cities to Wikipedia to museums all over the world, is more than culturally significant in a time where Russian president Vladimir Putin is trying to erase Ukraine from history books. Everything about Ukrainian national identity, including its literature, is under attack.

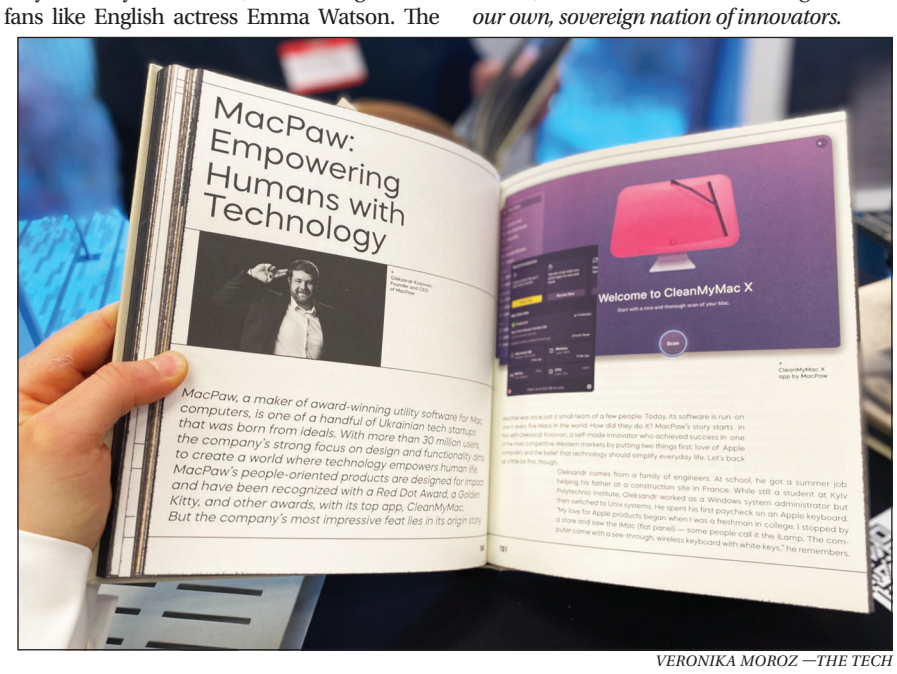
Innovation in Isolation begins with one of the first computers in Europe, Lebedev's MESM, then traces the rise of Ukrainian IT from the development of Address, one of the first high-level programming languages in the world, to the technology giants of modern Ukraine. With stunning multi-page photographs, firsthand quotes, anecdotes from primary sources, and a visual design that organizes information into bite sized-chunks, the book presents itself as more of a collection of facts than the kind of novel that demands readers' undivided attention for hours at a time. Flip to a random page, and you'll be taken on a whirlwind tour of a chapter-long Ukrainian equivalent of the 2016 Hollywood film *Hidden Figures*. But sit down and read it cover to cover, and you'll be immersed in a multi-dimensional narrative that desperately needs to be told.

As both a history of computing in Ukraine and a reflection of the development of Ukrainian identity alongside the computing industry, *Innovation in Isolation* includes detailed descriptions of both the hardware behind multiple generations of Soviet-era computers and the rise of an overwhelmingly grassroots computing culture. Instead of likening computer scientists to ivory tower intellectuals or antisocial hooded figures in a dark room, cybernetics is portrayed as an activity of the people. The book not only discusses the robots and graphics systems built by the first large-scale generation of Ukrainian computer scientists, but also how they brought computing into mainstream Soviet culture. It recounts events, parties, and the invention of their own metaphorical country, "Cybertonia," a place which existed "in four dimensions: energy, laughter, dreams, and fantasies!"

This do-it-yourself spirit epitomizes the resilience of Ukrainians through the fall of the Soviet Union and into its war-torn state today. In the 1980s, Soviet computer scientists, frustrated that their government did not believe a personal computer could possibly exist, began selling build-your-own computer kits that could be manufactured and distributed for cheap. When the Soviet Union disbanded and the economy collapsed, there was little financial incentives to innovate, owing to barely enforced copyright laws on Western inventions. That didn't stop some Ukrainian developers from producing their own games, like the internationally-acclaimed video game *S.T.A.L.K.E.R*, which takes place in the Chernobyl exclusion zone.

Unable to provide guarantees of what the future holds for Ukraine, *Innovation in Isolation* settles for a glimmer of hope for its possibilities by introducing us to the rising stars of the Ukrainian IT industry. The latter half of the book describes companies from Grammarly to the job-hunting website Jooble to PetCube, a device that lets users monitor their pets while they are away from home, which has garnered fans like English actress Emma Watson. The series of company descriptions reads like a cross between an advertisement and a series of company profiles in *Forbes*, but that's not unexpected, given that the book was commissioned by Ukrainian-American technology company MacPaw. (Its website claims that "every fifth Mac on Earth has a MacPaw app installed on it," and it goes without saying that the company's origin story takes up a sizable chapter in the second half.) But what makes these companies particularly impressive is how much they've accomplished with relatively limited educational resources. Before the Soviet education system began teaching computer science, and way before the Soviet education system actually began using computers instead of chalkboards to teach computer science, kids assembling and programming computers in their basements kick-started a new era of Ukrainian technology entrepreneurship.

From its heroic stories to MacPaw's promise to spend all book proceeds toward non-lethal Ukrainian aid, *Innovation in Isolation: The Story of Ukrainian IT from the 1940s to the Present* is the book that Ukrainian intellectuals desperately need Western science enthusiasts to read. *Look what Ukrainians have accomplished with so little, the authors seem to be telling us. We are our own, sovereign nation of innovators.*



VERONIKA MOROZ —THE TECH

An inside view of Innovation in Isolation: The Story of Ukrainian IT from the 1940s to the Present, opened to a page spread.

CONCERT REVIEW

Renowned violinist Midori returns to Boston

Midori presents a stunning violin concert accompanied by Özgür Aydin on piano

The Celebrity Series of Boston

Midori, violin; Özgür Aydin, piano

NEC Jordan Hall

March 7, 2025

By Angelica Zhu and Vivian Hir
EDITORS

For the first time since 2012, renowned violinist Midori Gotō, known publicly as Midori, returned to the Celebrity Series of Boston with a stunning program accompanied by Özgür Aydin on the piano. Opening with Robert Schumann's *Stücke im Volkston* ("Pieces in the folk style"), Op. 102, the program continued with Johannes Brahms's Sonata No. 1 in G Major followed by Francis Poulenc's Sonata for Violin and Piano, FP 119, Maurice Ravel's "Kaddish" from *Two Hebrew Songs*, and finally, Ravel's *Tzigane*, M. 76.

Interestingly, several of the pieces Midori chose for the program were not initially intended for a violin and piano duo, or were written by musicians who mainly worked on other combinations of instruments. Schumann originally wrote the work for cello and piano, Brahms wrote several violin sonatas before his first sonata for violin and piano, and Poulenc worked mainly with wind instruments. Nonetheless, Midori and Aydin blended their performances together expertly.

Schumann's *Stücke im Volkston* consisted of five movements. One of the greatest composers of the early Romantic era, Schumann is known for creating passionate and poetic music, and this is no exception. The movement shifted from the whimsical notes likened to a frolicking goat, to a focused repetition, then to a slow connected and expressive note that seemed never-ending. The two instruments accompanied each other in strength and built upon each other, whether it was the violin echoing the piano's phrases, or the piano supporting the violin with chords.

Following the Schumann piece was the Brahms sonata, which consisted of three movements instead of the traditional four in this composition. The violin circled and danced around the strong yet calm chords of the piano, and the two harmonies rose and fell together. The soft plucking of the violin reflected against the clear sparkling notes of the piano, and Midori's precise technique ensured that each vibrato and spiccato were exactly where they should be. In fact, Midori's perfection sometimes almost takes away from the emotional aspect of the performance. Every note and transition seemed to land exactly where it should have been, but that also speaks to Midori's incredible control of her instrument.

Midori's performance continued with Francis Poulenc's Sonata for Violin and Piano, FP 119, another captivating display of technical precision and emotional depth. She skillfully balanced the sonata's contrasting moods, seamlessly shifting from the brooding lyricism of the first movement to the playful energy of the second. Accompanied by a pianist who matched her sensitivity, Midori delivered a performance that deepens the listener's appreciation of Poulenc's uniquely Romantic and melodic style.

Afterwards, the duo performed Ravel's "Kaddish" from *Two Hebrew Songs*. In Judaism, the Kaddish is a Jewish hymn sung for prayer; the "Kaddish" in this piece is for mourning. Midori opened with an incredibly powerful melody that sounded like a singing voice filled with grief. Adding to the sorrowful nature was her subtle note slide that changed the melody's pitch ever so slightly. The quick, ascending notes on the piano resembled smooth ripples in water, which provided a nice contrast to the violin's lyrical sound. Towards the end of "Kaddish," the violin's crescendo and piano's striking chords built up to this climax of emotional tension that perfectly conveyed the rawness and pain that comes with loss.

The concert concluded with Ravel's *Tzigane*, a famous virtuoso piece for the violin.

Midori, Page 7

PHOTO COURTESY OF ROBERT TORRES

Violinist Midori and pianist Özgür Aydin perform at New England Conservatory's Jordan Hall on Friday, March 7.

PLAY REVIEW

Henry V, in an MIT hour

The MIT Shakespeare Ensemble performed a condensed, humorous, and romantic interpretation of one of Shakespeare's most popular plays

Henry V

Written by William Shakespeare

Directed by Kate Pitt

La Sala, MIT

March 14-16; March 20-21

By Angelica Zhu
ARTS EDITOR

With creative prop usage, smooth stage transitions, and a talented cast, the MIT Shakespeare Ensemble presented a clever synopsis of Shakespeare's Henry V, one of his most popular works. The play, first performed in 1599, follows King Henry's growth into a decisive and inspiring leader, culminating in his victory over France and the Battle of Agincourt. Also called Henry of Monmouth, Henry V ruled as King of England from 1413 until his death in 1422, and was known for elevating England to its military prowess.

Though the stage in La Sala was small, the Ensemble did an excellent job decorating the space, as well as moving the cast through their costume changes and transitions. The set was empty besides a single throne, and the intimate performance space enhanced the impact of the speakers. Key moments were emphasized with an additional chorus, music, or supporting sounds.

While the play typically runs over two hours, the Ensemble conveyed the full story and preserved crucial character depth condensed in under an hour. The Ensemble created a lighter atmosphere for the college audience by cutting more graphic scenes, such as the one in which Henry orders the execution of all captured French soldiers after discovering their murders of defenseless English boys.

The production brought characters to life through its clever, minimal usage of props: a chest of tennis balls sent to mock Henry V's youth, a bag of gold accepted by a bribed noble, and a drink symbolizing a Frenchman's prioritization of play over battle. The performance made striking use of bursts of lights, dramatic red and blue battle scenes, and handheld flashlights.

Most characters wore traditional theater costumes, with the English in courageous crimson, the French in royal blue, and Princess Katharine, the daughter of the king of France, in a simple pink ruffled gown. Interestingly, King Henry swaggered around the stage in a business casual outfit and a plastic crown.

This took little away from the character, however, thanks to an excellent performance and strong dialogue delivery from Zach Marsinov '26. In his portrayal of Henry V, Marsinov struck a skillful balance between the image of a fearless and proud king — one who believes strongly in his men, his country, and his divine right to lead — while also conveying the grief and remorse of a man tormented by the ghosts of his fallen soldiers. In a pivotal scene, the spirit of a dead soldier tells the haunted king that death and pain are the side effects of battle, and it isn't his responsibility to carry these burdens.

Significant airtime was also given to the wooing of Princess Katharine, a scene that occupied less than an act in Shakespeare's original. Played by Ananda Santos Figueiredo '25, Katharine was fiery and shared intense stage chemistry with Henry V, generating much laughter from the audience. Despite describing himself as a man of work and battle, and not a master of words and love, Henry V repeatedly proposed his love for Katharine, and, of course, for her country, which he hoped to claim through their marriage.

The short performance ended like it began, with a monologue given by Katharine, who transformed back into the role of the Chorus as she honored the play and its real-life history. This production could not have been the same without Figueiredo's clear and superb double performance.

It was symbolic that the same person played Katharine and the Chorus; in the Director's Note, Kate Pitt wrote, "We need someone who can look both forward and back to lead us through the story, to remind us how we got here and where we're going next." In the history of England and France, Katharine was that someone: wife to Henry V, mother to Henry VI, and the beginning of a long line of kings. Centered around the complex relationship of a monarch to his nobles, people, and himself, Henry V investigates the theme of centralized power and its effective usage.

The MIT Shakespeare Ensemble's take of Henry V was a great blend of creativity, humor, and historical storytelling. Through clever staging, minimal yet effective props, and a cast that brought both depth and charisma to their roles, the Ensemble succeeded in delivering a compelling adaptation. The performance balanced drama and tradition with innovation, honoring Shakespeare's play while making it accessible to a modern college audience.

Solution to Passionfruit
from page 11

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

Solution to Guava
from page 11

+26 2	4	6	×8 1	5	3
6	3	5	4	2	1
×96 4	2	3	+15 5	1	6
+18 1	5	4	6	3	×8 2
5	1	×216 2	3	6	4
3	6	+3 1	2	+9 4	5

Solution to Midi-term
from page 11

■	S	A	P	■	■	■	S	N	A	P
3 G	U	L	L	■	■	9 C	O	I	N	S
10 U	C	L	A	■	11 S	L	A	C	K	S
12 I	C	A	N	13 T	T	A	K	E	I	T
14 S	O	Y	B	E	A	N	S	■	■	■
15 E	R	S	■	16 A	R	G	■	17 C	18 A	19 B
■	■	■	20 O	C	T	O	21 P	O	D	A
22 O	23 F	24 F	T	H	E	R	A	I	L	S
25 R	I	O	T	E	D	■	26 S	T	I	R
27 A	R	I	E	S	■	■	28 T	U	B	A
29 L	E	E	R	■	■	■	30 A	S	S	■

Midori ends with Ravel's Tzigane

Midori, from Page 7

Meaning "Romani" in French, *Tzigane* stands out for being in the style of a Hungarian rhapsody. Midori captivated the audience right away with her smooth, deliberate bowing that brimmed with energy. The significant contrast between the short and long notes in the melody made the piece feel dynamic and ever-changing. The piano's quasi cadenza introduction contributed to a stormy opening at first, but then the intense trills helped build up anticipation rapidly and transition to the violin's playful passage.

The violin's light grace notes as well as the frequent staccatos resulted in a lighthearted and mischievous passage that evoked images of a galloping pony. Similarly, the piano's repeating octaves added to the melody's jumpy nature. The main highlight of *Tzigane*, however, is the violin's solo cadenza at the end of the piece. After a relatively calm period in which the piano played a shimmering melody while the violin played pizzicato notes as a nice, finishing touch, the violin's melody started to enter a state of frenzy. Midori's rapid and intense playing had a dizzying effect and left the audience spellbound as she played each improvisation precisely and impeccably. When she finished playing *Tzigane*, the entire audience stood up to give a standing ovation, and some in the background yelled, "Bravo!"

After the performance, Midori and Aydin played "Hai Luli" from *Six Melodies et Une Havanaise* by Pauline Viardot for the encore. Midori finely expressed the emotional complexities in the piece, smoothly transitioning between the wistful and dreamy parts of the piece.

Midori's performance was truly impressive, showcasing both her technical precision and deep musical expression with the violin. From the emotional depth of Schumann's *Stücke im Volkston* to the exciting energy of Ravel's *Tzigane*, she captivated the audience with every piece. Along with Aydin's expert piano accompaniment, the two created a dynamic and engaging experience.

MIT women's swimming and diving claim first national championship; men finish ninth

Multiple NCAA records and All-American finishes by MIT Swim and Dive at the Division III National Championship

By Alex Tang
EDITOR-AT-LARGE

From March 19 to March 22, MIT Swimming and Diving competed at the NCAA Division III Championship in Greensboro, North Carolina. The women won their first national championship in program history and the men finished ninth. The College Swimming and Diving Coaches Association of America (CSCAA) announced Coach Meg Sisson French as one of the two recipients of the Swim Coaches of The Year Award for Division III. Sisson French leads both the men's and women's programs at MIT, and is the first female coach in Division III history to win a national team title.

Women get first national title via relay records and individual victories

After winning their 14th consecutive NEWMAC conference title, the Engineers sent ten swimmers and two divers to the NCAA championship. The team meshed veteran experience with young talent: Lauren Adler '28, Kate Augustyn '25, Fiora Beratahani '27, Sarah Bernard '28, Jessica Crane '28, Rachel Loh '25, Annika Naveen '26, Ella Roberson '27, Sydney Smith '27, Belise Swartwood '28, Alexandra Turvey G, and Iris Yang '25.

The Engineers scored 497 points, beating second place NYU by a mere 27 points. They swept four out of five relays, setting NCAA records in the process, and also had several individual titles thanks to performances from Augustyn (100, 200 Backstroke) and Smith (100 Butterfly).

Listed below are the results from the finals at night — in other words, swims and dives that scored points. The strokes for each event are abbreviated as follows: Freestyle as Free, Backstroke as Back, Breaststroke as Breast, Butterfly as Fly, Individual Medley as IM.

Individual Events:

200 IM; Augustyn: 3rd, 2:01.35.

50 Free; Naveen: 4th, 22.89. Roberson: 6th, 22.97. Turvey: 11th, 22.89 (B-final).

400 IM; Bernard: 5th, 4:21.17. Adler: 12th, 4:24.32.

100 Fly; Smith: 1st, 53.96. Turvey: 5th, 54.27.

200 Free; Roberson: 4th, 1:49.42.

1 Meter Diving; Beratahani: 5th, 426.45. Loh: 16th, 384.80.

200 Fly; Swartwood: 6th, 2:02.21.

100 Back; Augustyn: 1st, 53.41. Ties own NCAA record. Smith: 2nd, 54.48. Naveen: 16th, 56.83.

100 Breast; Bernard: 8th, 1:02.80.

1650 Free; Adler: 13th, 17:09.17.

100 Free; Naveen: 3rd, 49.95. Turvey: 4th, 49.96. Smith: 6th, 50.68. Roberson: 10th, 50.01 (B-final).

200 Back; Augustyn: 1st, 1:55.85.

200 Breast; Bernard: 5th, 2:14.53.

3 Meter Diving; Beratahani: 3rd, 497.55. Loh: 13th, 433.15.

Relays:

400 Medley: 1st, 3:38.48. Augustyn, Bernard, Smith, Turvey.

200 Free; 1st, 1:30.00. Turvey, Smith, Roberson, Naveen. NCAA Record.

200 Medley; 1st, 1:39.51. Augustyn, Bernard, Naveen, Roberson. NCAA Record.

800 Free; 4th, 7:19.40. Turvey, Smith, Augustyn, Roberson.

400 Free; 1st, 3:18.03. Turvey, Smith, Augustyn, Roberson.

Men finish ninth with strong underclassmen performances

After winning their 16th consecutive NEWMAC conference title, the Engineers sent ten to NCAAs. The team was largely composed of underclassmen: Aitor Arrese-Igor '27 , Kelson Cantrell '28, Grant Hu '28, Eugene Jiang '26, Gidean Karp '28, Nathan Kim '28, Bryce Roberts '27, Jason Wang '27, Ben Wu '28, and Thomas Wu '26. The team, which finished ninth overall with a total of 131 points, garnered several All-American honors ranging from the 100 backstroke to the 400 individual medley.

Listed below are the results from the finals swims.

Individual Events:

500 Free; Hu: 7th, 4:25.76.

200 IM; Wang: 13th, 1:48.95.

400 IM; Hu: 5th, 3:51.90.

200 Free; Kim: 7th, 1:39.41.

200 Fly; Hu: 12th, 1:48.16.

100 Back; Kim: 7th, 48.03. Arrese-Igor: 15th, 49.00.

200 Back; Kim: 13th, 1:47.64.

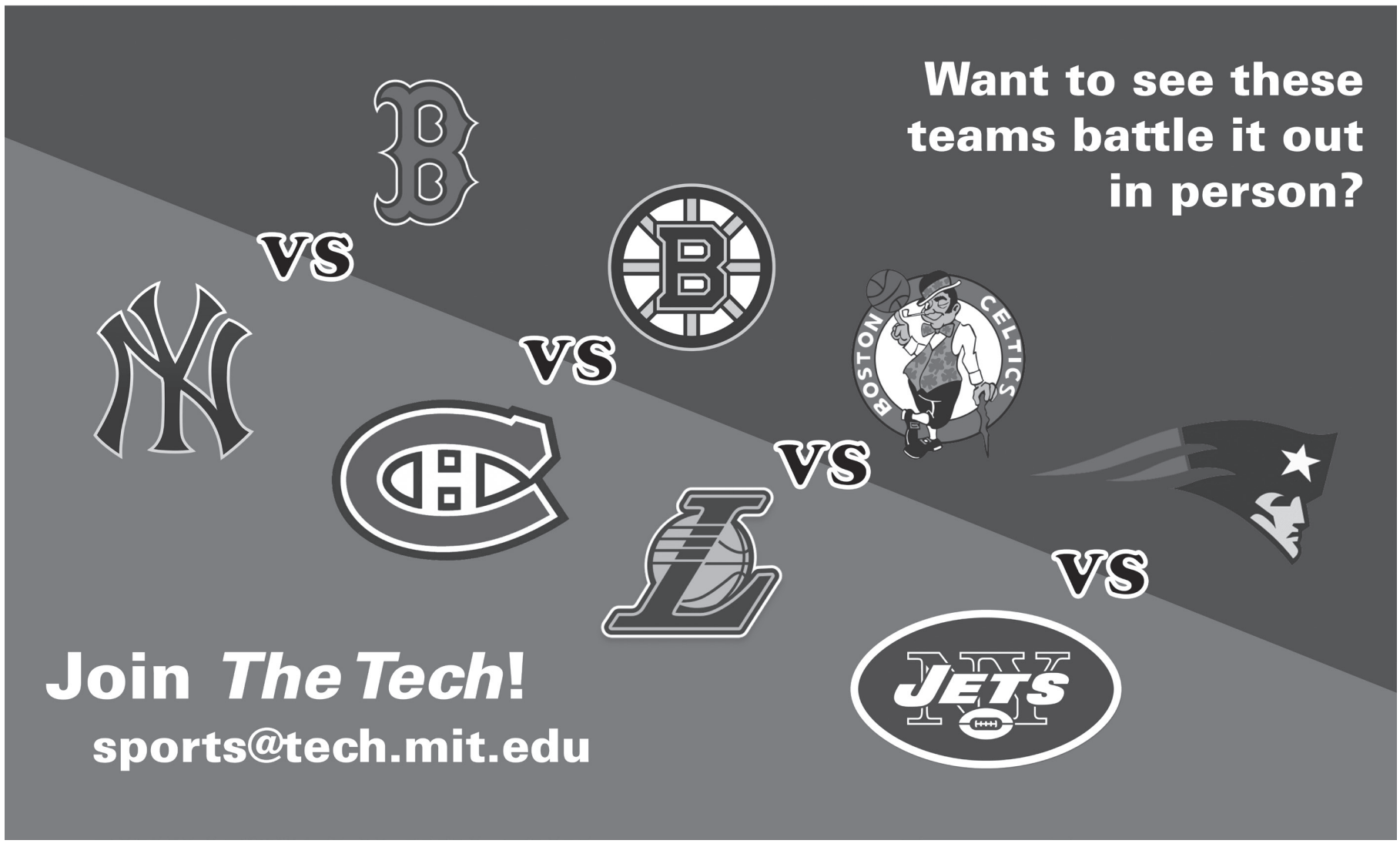
Relays:

400 Medley; 11th, 3:14.20. Arrese-Igor, Wu '26, Wu '28, Jiang.

200 Medley; 11th, 1:28.38. Arrese-Igor, Wu '26, Roberts, Jiang.

800 Free; 11th, 6:37.01; Hu, Kim, Wang, Cantrell.

400 Free; 7th, 2:58.02; Kim, Jiang, Arrese-Igor, and Roberts.



MIT-Dana Farber Center for Glioblastoma Systems Biology hosts inaugural Glioblastoma Tumor Microenvironment Symposium

Leading experts convened to discuss novel methods of curing the disease

By Eric Wang and Veronika Moroz
SCIENCE STAFF

For most cases, it starts with a headache.

Untreated, it can progress to seizures and changes in personality. By the time symptoms become severe, an MRI scan will reveal the cause: a mass of brain cells that won't stop growing, pushing against and, in some cases, invading and destroying healthy tissue. A glioblastoma.

With 110,000 new cases diagnosed each year and a survival rate of around one year, glioblastoma is not only the most common form of brain cancer, but also the most deadly, says Dr. Forest White, Professor of Biological Engineering.

It's an "impossible problem," White says. But to him, that's what makes it so interesting.

White worked as a Senior Research Scientist of the biotech company MDS Proteomics before joining MIT as an Associate Professor of Biological Engineering in 2003. At MIT, he met a neuro-oncologist who described his experiences treating glioblastomas. "Almost all of his patients died because of the disease, despite their best efforts," White recalled. "As a scientist, I thought this was completely unacceptable and that we absolutely have to do something."

On March 27, the MIT-DFCI Center for Glioblastoma Systems Biology hosted the Glioblastoma Tumor Microenvironment Symposium. Organized primarily by White and Isadora Deese, administrative assistant of the White Lab, the symposium featured presentations from specialists from across the country on topics ranging from cutting-edge treatments and better models for clinical trials to methods of accelerating the fight for a cure.

Defining the challenge

Cells from the main tumor spread out, or disseminate, into different parts of the brain, where they are free to regrow. However, they are hard to treat due to being surrounded by layers of healthy tissue. One step towards curing this disease is figuring out how to target these disseminated cells.

White's presentation featured the work of one of his former postdocs, Ryuhjin Ahn, who developed the Investigating Signaling Networks in Heterogeneous Tissues (INSIGHT) protocol to accelerate characterization of these cells.

INSIGHT works by freezing samples of the brain, and then slicing the brain and preserving the cells in chemicals so they can be analyzed. "With this approach, we can now quantify how these disseminated cells are responding to different therapies," White said.

This approach is particularly impactful because of how diverse the tumors can be. "Every single tumor looks different from another one," said Antonio Iavarone, Professor of Neurological Surgery, Biochemistry, and Molecular Biology at the University of Miami. Iavarone's talk described how the tumor cells and the tissues around them change as the glioblastoma progresses.

The tumor itself is also immunosuppressive, meaning that it hijacks the body's defenses so it cannot be identified as a threat. One particular immune cell, the glioblastoma-associated macrophage (GAM), plays a pivotal role in cancer progression.

"GAMs comprise about 30% of human [brain] tumors, and they drive tumor progression, therapeutic resistance and immunosuppression," White highlighted. That's why White Lab graduate student Yufei Cui is working on identifying what makes GAMs suppress the immune response to the tumor instead of activating it. "Using this information, you can start identifying the treatment modality that we might want to use to target some of these macrophages after they've interacted with tumor cells," White said.

Developing new treatments

For over 20 years, the standard procedure for treating glioblastomas has been removing the tumor by surgery, and then treating the patient with radiation or chemotherapy to kill the remaining cancerous cells.

However, tumor recurrence is common, according to Ennio Antonio Chiocca, Professor of Neurosurgery at Harvard Medical School. Chiocca's solution involves oncolytic immunoactivation: injecting a modified, non-pathological version of a herpes virus into the tumor in order to enhance the body's natural immune response against it. The virus, CAN-3110, went through an initial round of clinical trials in 2023. It was found to be non-toxic to humans and was associated with improved survival rates for certain types of tumors.

However, according to Natalie Artzi, a researcher at the Institute for Medical Engineering and Science (IMES) at MIT and Associate Professor at Brigham and Women's Hospital, to really prevent tumor recurrence, you "need to train the immune system to help us eliminate the tumor."

"This six week gap between surgery and chemo radiation really facilitates the local spread of the tumor," Artzi said in her presentation. Her lab is working on a treatment that involves removing the tumor during surgery and then spraying the cavity with a thin layer of a hydrogel designed to slowly release immunoactivating medicine into the remaining tissue.

The treatment is particularly effective because it bypasses the blood-brain barrier, which is the body's way of preventing most substances from entering the brain. "Something like 97% of the approved drugs do not cross the blood-brain barrier," White told The Tech. "Those cells basically hide behind that barrier and are unaffected by these treatments."

Artzi's solution allows scientists to use any drug of interest, and her lab has even designed the hydrogel to release the drug more gradually. In preliminary trials, injecting mice who have glioblastoma with the hydrogel led to 80% of the mice being "completely cured."

Another novel solution is not attacking the tumor cells directly, but rather slowing down the progression of glioblastoma in the brain. Glioblastoma cells can disseminate in other parts of the brain at very high speeds — a whole hemisphere could be taken over by glioblastoma cells in as little as two months — and proliferate in the surrounding brain tissue, impacting other cognitive functions. But the exact mechanism of how the glioblastoma cells move and ultimately reach other parts of the body is still not well understood.

Through their efforts, University of Minnesota Biological Engineering Professor David Odde and his team were able to develop a model that demonstrated how glioblastoma cells move by using molecular clutches to "stick" to the surface of the brain and pull the main body of the cell where it needs to go.

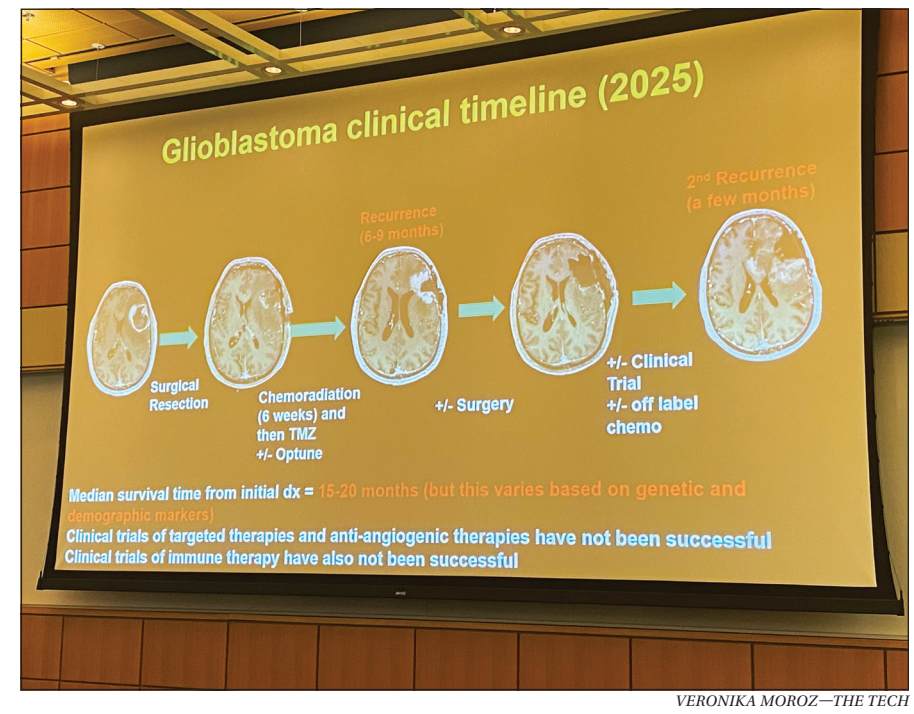
Armed with this better understanding of the diffusion mechanism of glioblastoma, Odde and his team started looking at potential anti-migratory drug candidates for clinical trials, identifying imipramine as a potential drug candidate. Based on preliminary data for the imipramine test group, "these cells initially have these long spiky protrusions that rapidly disappear." Odde highlighted, "The cells kind of retract and were found to be non-migratory in the presence of imipramine." In addition to his research, Odde also presented his plan for an imipramine clinical trial to treat glioblastoma. Audience members and other speakers provided feedback on the proposal.

Maximizing treatment efficacy

Symposium attendees also discussed improvements to existing glioblastoma treatments. Mayo Clinic Professor of Radiation Oncology Jann Sarkaria presented his latest work on radiosensitizers, which are vital in radiation treatment.

One of the most common treatment plans used for the treatment of glioblastoma is radiotherapy after a successful surgery removing the tumor. Radiation therapy uses high energy beams to damage DNA in the target cells and prevent cells from further growth. However, cancer cells retain the ability to fix breaks in their DNA just like normal cells, meaning that any damage done during radiation therapy could get repaired and remain ineffective.

Sarkaria's research on radiosensitizers, specifically the ATM-kinase inhibitor, solves the potential flaw of radiation therapy. The ATM-kinase protein is one of the key proteins in the repair of DNA breaks. When activated, ATM-kinase controls cell checkpoints during growth and manages DNA repair operations. Sarkaria has tested his experiments in a PDX model, which is where a small piece of tissue from the patient is implanted into a humanized or immunodeficient mouse. The inhibitor was later tested in clinical trials.



VERONIKA MOROZ—THE TECH

An illustrative slide showing the progression of a glioblastoma patient's decline, presented by Dr. Ennio Antonio Chiocca.

For patients, radiation therapy is uncomfortable, to say the least, causing headaches, hair loss, seizures, nausea, and extreme fatigue. But according to Dr. Franziska Michor, Professor of Computational Biology at Harvard University, scientists might be able to use less radiation to get the same effect.

Like many other researchers in the field, Michor uses mice injected with glioblastomas to "characterize the microenvironment and the dynamics of radiation response of different subsets of cells." In particular, she presented on "whether different radiation fractionation schedules might help maximize efficacy of a given amount of radiation." The experiment, which involved two groups of mice injected with glioblastomas, was able to get the same survival rate for each group of mice, even though one was treated with twice as much radiation as the other.

In addition to creating an ideal radiation fractionation schedule, Michor conducted research on when to administer chemotherapy or immunotherapy drugs after radiation. Through a mathematical model of the treatment response, she estimated an ideal administration time of 41 minutes after radiation for mice, which scales up to 57 minutes after radiation for humans.

Through these scheduling methods, Michor hopes to reduce strain on the patient while maximizing damage to the tumor, ultimately improving survival. The schedules are now undergoing clinical trials.

Links to other cognitive functions

Some presenters also shared their research on the inner workings of glioblastoma and how it influences the rest of the brain. MIT Associate Professor of Biology Stefani Spranger discussed the interactions between two types of white blood cells, T lymphocytes and dendritic cells. Specifically, Spranger found that dendritic cells are vital in determining if the T lymphocytes in an immune response can mount an effective anti-tumor response or if they lead to an exhausted T lymphocyte response.

Stanford University Professor of Neurology and Neurological Sciences and a Howard Hughes Medical Institute Investigator Michelle Mongje presented her research on pediatric cases of glioblastoma tumors, and specifically, the interaction between the myelin sheath and tumors. The myelin sheath is one of the most important parts of a neuron; it wraps around the neuron like insulation on the outside of a wire, helping to accelerate the speed of a signal between neurons. The myelin sheath, however, is also linked to glioblastoma.

"When you take a step back and think about the developmental processes that might be correlated with the time and place incident of pediatric gliomas, it strikes you that developmental myelination is happening in the times and places tumors tend to form," Monje said. A potential reason for this is the plasticity of myelin and the possibility of an oncogenic mutation — changes in myelin can improve connectivity in the brain, and any oncogenic mutation in the myelin can have a negative impact on the surrounding brain tissue.

Monje ended her presentation by stressing the fact that these qualities indicate that scientists must approach these cancers not just from the perspective of just tumors and cells, but also from a neuroscientific perspective as well.

Collaborating towards a cure

The Glioblastoma Systems Biology Glioblastoma Tumor Microenvironment Symposium is one of the events held by the MIT-DFCI Center for Glioblastoma Systems Biology, which was launched about a year and a half ago.

"I think you heard a lot of really exciting studies that are interconnected, and that's kind of the beauty of this symposium and also the beauty of Forest [White]'s program," Sarkaria reflected.

For White, the symposium is a chance for renewed optimism among glioblastoma researchers. "My hope is that by seeing the different approaches people are taking, they can try and sort of synergize some of those ideas to come up with new approaches," he said. "From those new approaches, hopefully we can actually move treatment forward."

Passionfruit

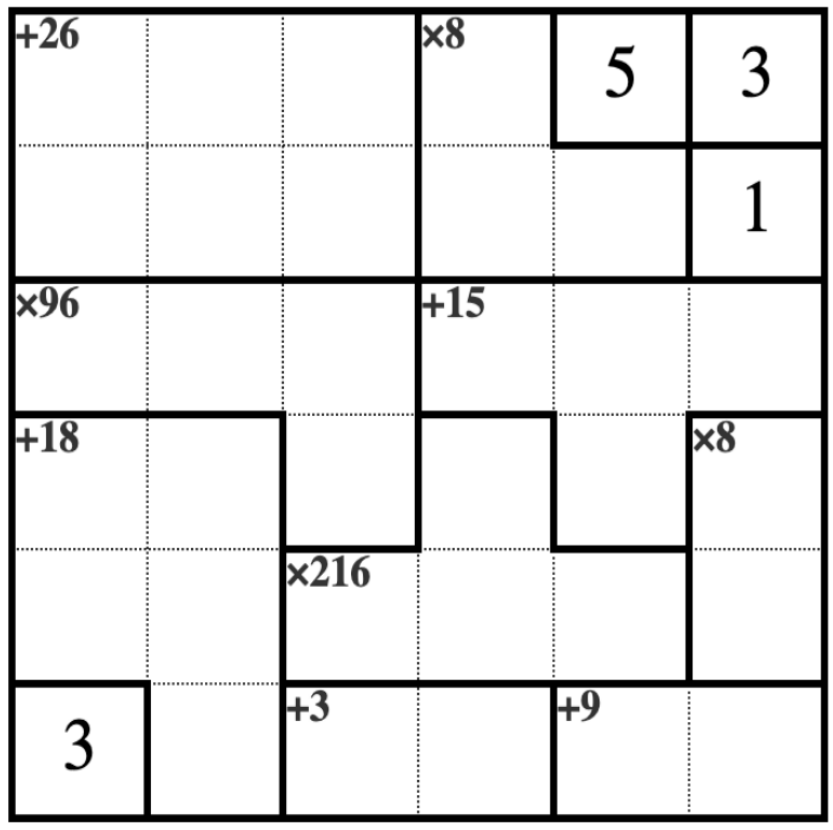
Solution, page 8

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

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.

Guava

Solution, page 8



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.

Midi-term by Manaal Mohammed

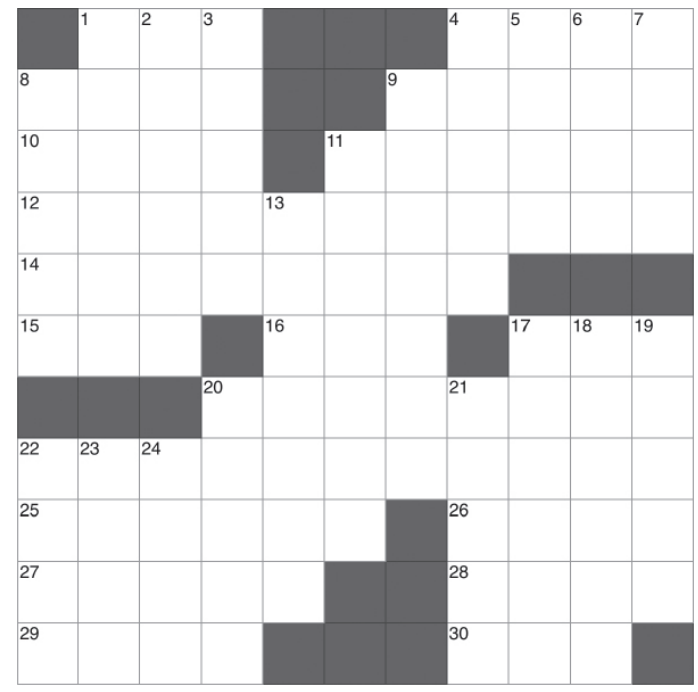
Solution, page 8

Across

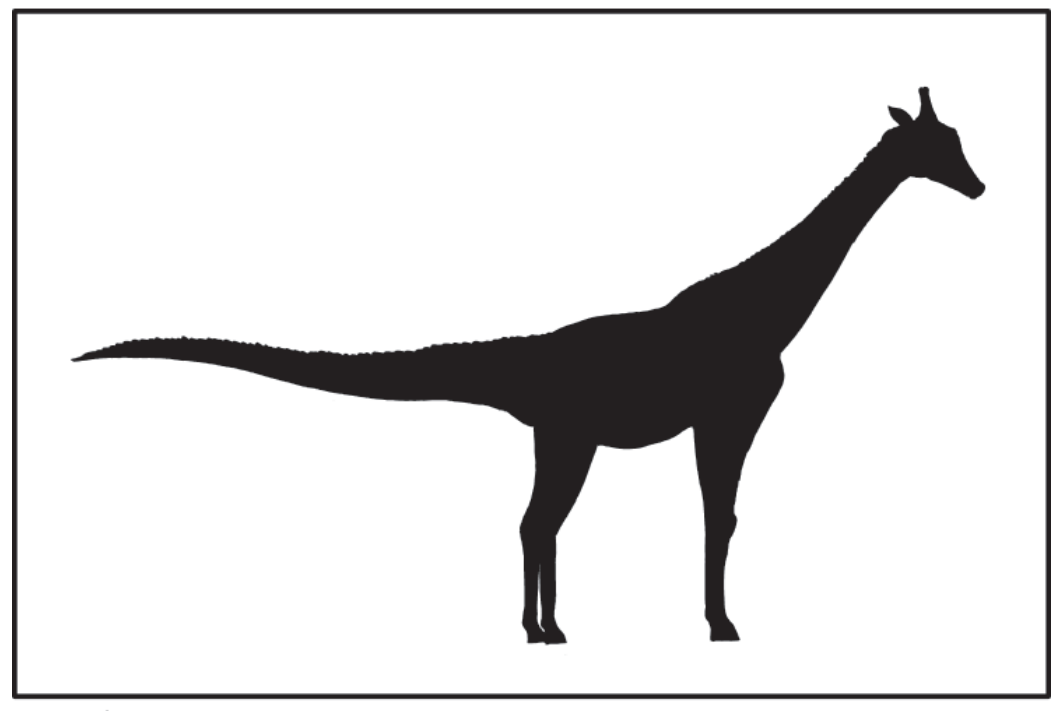
01 Maple, for one
04 Ghost image, perhaps
08 Common beach snack swiper
09 Comes up with, as a phrase
10 Campus where parts of "Legally Blonde" were filmed, briefly
11 Messages at work, say
12 "No more!"
14 Tofu production necessity
15 "House" settings, shortly
16 Transmedia series of puzzles with a central narrative
17 "Transatlanticism" band Death ___ for Cutie
20 Eight-armed order
22 Where something running amok may go
25 Rose up
26 Ado
27 Noted 3-down sign
28 Instrument noted for its distinctive "BLAAAAAT"
29 Lascivious look
30 Manhole location?

Down

1 Ease
2 Eases
3 One-Step solution?
4 Saturates, as almonds in hot water before peeling
5 One of Santa's two famed lists
6 Flashcard app oft used by pre-meds
7 Covert "hey!"
8 "Human person" is one for three raccoons in a trench coat, typically
9 Cacophony of multiple 28-acrosses rolling down stairs, for example
11 Flinched
13 Instructs, as a class
17 Congressional union?
18 Improv'd lines
19 Iraqi port that Sinbad the Sailor sets out from
20 Baby bear?
21 Alison Roman's Caramelized Shallot ____
22 Freudian fixation associated with smoking
23 Amazing, slangily
24 French liver



[1278] Giraffes



xkcd
A WEBCOMIC OF ROMANCE, SARCASM, MATH, AND LANGUAGE
by Randall Munroe

If you fund my Kickstarter ...

Hall and Abdelbarr discuss goals and plans

Hall and Abdelbarr, from Page 1

cause I couldn't be more excited to attend as many meetings as possible across campus to make sure I serve people best and they know how to take advantage of what the UA has to offer them.

Abdelbarr: Throughout the course of my freshman year, I became aware of the ways that the student body wanted to interface with the administration. I saw the many avenues that were taken to achieve this end, as well as some of the gaps that could be addressed. I think this was definitely my main pull factor: helping to serve as a liaison between the interests of the student body and the higher ups of our institution.

It is really important to me that I help to communicate the interests of the student body to make MIT feel more systematically connected. Throughout the campaign preparation and process, I also grew more aware of the ways that the UA could become more transparent and efficient in many facets, including the ways we represent student voices.

***TT*: Why did you decide to run together?**

Hall: I decided to run with Mariam because of how well our values aligned on what is most important. We both are committed to putting students first with a "for the people" mindset. Regarding less values-based topics, I respect Mariam's opinions and enjoy working with her, knowing we share a common goal. I was seeking a sophomore to broaden our perspective and to keep younger classes engaged as we look to the future.

Abdelbarr: Alice is clearly very passionate about the UA and making lasting improvements to increase engagement and impact. Her determination has definitely made me want to be a part of the work that she will do. I think that we share overarching goals, but also bring different perspectives and experiences to help bring about these goals.

***TT*: What do you see as the primary challenges facing the UA for the upcoming school year?**

Hall: External forces such as federal funding cuts have caused financial changes across the Institute. Although we can't predict the future, we are preparing for the impact these factors may have on the UA. Changes seem to be rapid and unprecedented; however, we are fully confident in the systems we have in place. For example, the previous UA administration kept spending low and money never posed an issue to the tasks they wanted to accomplish. Although circumstances are different, working with similar financial officers and appropriate adjustments this coming year will ensure we follow in their fiscal footsteps.

***TT*: Do you have any compliments or criticisms for the current UA administration?**

Hall: We deeply admire the previous administration's values and everything they have been able to accomplish in their term. Our administration is committed to continuity and building systems and procedures that can endure far past our term. Thus, to start this tradition, we have looked to the previous administration to learn valuable lessons in areas that went smoothly and take their advice on initiatives that can be further built upon. For example, we love their participatory budgeting initiative and look forward to improving its structure.

***TT*: What initiatives do you hope to bring to the UA? Could you expand upon the specifics of your transparency platform?**

Hall: The main lack of UA visibility isn't because the UA is hiding things, it's that we are all busy and can't read every email we receive. Of course we will still send emails, but I envision them being less formal and more like a "TL;DR" because we are peers. Of course, everyone will have access to all the fleshed-out goodness, but the goal is to make emails efficient and digestible so more people can read them.

We will be chatting with more students to finalize the specifics of our feedback system. We want to make sure we find the sweet spot between valuing your time and gathering useful information. Most UA meetings are already open-door. My hope is to make that more clear and welcoming. Again, face-to-face conversations are the best way for students to express their concerns and for us to connect with them. That's why I plan to join the meetings of as many clubs and with as many club leaders as I can to make sure we are all on the same page about how we can work together.

***TT*: In light of recent federal funding cuts, how will you guarantee funding for student life and research?**

Abdelbarr: In the same vein as the issues we foresee the UA facing this coming year, we definitely understand that funding for student life and research may be more strained. Unfortunately, we cannot claim to guarantee funding if it is outside of our direct domain. That being said, we do not plan on diminishing our initiative of guaranteeing advocacy for creating a dining hall and more dependable UROP funding. We think that it is extremely important that the student body's priorities are reflected in the way that available funding is allocated, so we will relentlessly advocate for these changes with the administration.

***TT*: What experience do you have that you feel might be relevant to your new positions?**

Hall: I have experience as Co-Chair of the UA Committee on Education, which is a group we have been able to grow by four times in membership this year. This experience allowed me to observe the UA operations and gave me insight into how we interact with the greater student body, as well as how we can improve processes such as our communication and student engagement. I also think my time in the Gordon-MIT Engineering Leadership Program (GEL) has provided me with a lot of insight into how I can grow as a leader and given me the tools to do so. For example, I hope to implement some of the peer evaluation processes we used there within the officer team to ensure we are all able to grow.

Abdelbarr: Although I have not had direct experience within the UA, I think that other experiences I have had with student and institutional organizations have lent me some insight into what I can and would like to bring to my position. For instance, my experience organizing with clubs has shown me the obstacles facing expedient and accessible funding. Other experiences that I have had that are less directly related to the UA, such as being a Burchard Scholar or Debate Fellow, have allowed me to explore and lead conversations around pressing societal issues, which I think will be an important asset.

***TT*: What highlights or challenges did you face during the campaign process?**

Abdelbarr: A major highlight of our campaign process was the opportunity to connect with students and club leaders about their concerns on campus and how to best cater our platform to the student body's benefit. It was great to be able to focus our campaign time on our peers by encouraging everyone to vote to increase engagement and fielding any questions people may have had.

***TT*: Anything else?**

Hall: It will be an honor to serve the best students in the world. We will do so with humility and welcome any and all feedback along the way.

In memoriam: Frederick Greene, Professor Emeritus of Chemistry

Frederick Greene, Professor Emeritus of Chemistry, died on March 22 at the age of 97. Greene worked in the field of physical organic chemistry and free radicals.

In an email to the Chemistry Department, Department Head Professor Troy Van Voorhis praised Greene for his "dedication to teaching, mentorship, and the field of physical organic chemistry." Van Voorhis added that "he was a constant source of joy to those who interacted with him and his commitment to students and education was legendary."

MIT News featured several graduate students who had known Greene; all spoke highly of his teaching and mentorship capabilities. Professor of Chemistry Rick Danheiser stated that Greene's "counsel and mentoring" was "invaluable" as they taught 5.43 (Advanced Organic Chemistry) together. The Frederick D. Greene Teaching Award, which recognizes outstanding contributions in chemistry teaching by undergraduates, has been named after Greene since 1993.

Greene is survived by his children, grandchildren, and great-grandchildren. A memorial service will be held on April 5 at 11 a.m. at the First Congregational Church in Winchester, Massachusetts.

—Alex Tang

VIVIAN HIR—THE TECH

A view of the Boston skyline from the Longfellow Bridge on Sunday, March 23, at 6:20 p.m.

In memoriam: Lee Grodzins, Professor Emeritus of Physics

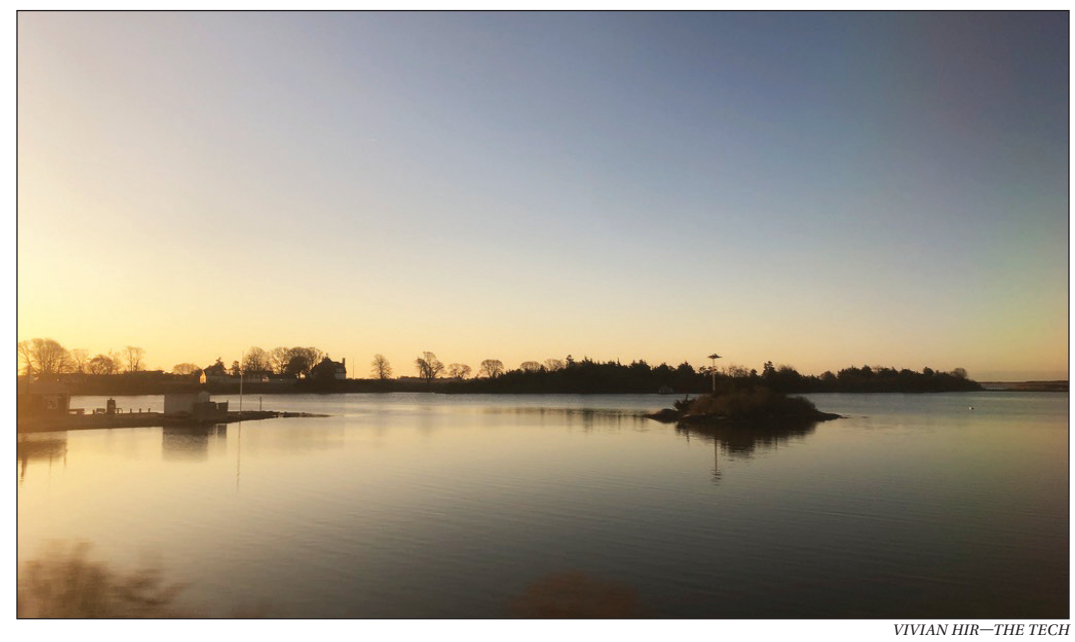
Lee Grodzins, Professor Emeritus in Physics, died on March 6 at the age of 98. Grodzins was a pioneer in nuclear physics research. A talented experimentalist, Grodzins determined the helicity of the neutrino, an electrically neutral particle that interacts only through gravity and a fundamental force known as the weak interaction.

Grodzins came to MIT in 1959 and was a faculty member for 40 years. He was the architect behind several notable studies, ranging from computer axial tomography using synchrotron radiation to his study of heavy ion interactions with nuclei using a Van de Graaff accelerator. Grodzins was also known for his mentorship and taught the Junior Lab subject, required for undergraduate physics majors for many years.

Grodzins was known for his advocacy in the policy space. In 1969, he co-founded the Union of Concerned Scientists, a nonprofit that calls for scientific research to be angled towards building a healthier and safer world. In 1999, he founded the nonprofit Cornerstones in Science, a public library initiative that seeks to enhance public engagement with science.

Grodzins is survived by his wife Nora Nykiel Grodzins and his children.

—Alex Tang



VIVIAN HIR—THE TECH

The sunrise along the Amtrak Northeast Regional at Stonington, CT, on March 27, at 7:01 a.m.