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# The Tech

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WEATHER, p. 2

THU: 57°F | 53°F  
Rain.

FRI: 64°F | 50°F  
Rain.

SAT: 56°F | 44°F  
Cloudy.

Volume 144, Number 6

Thursday, April 11, 2024

## Into the darkness: the April 2024 solar eclipse

*At 3:29 p.m., April 8, 2024, masses of students piled onto Briggs Field, Killian Court, and the Lobby 7 steps to view the solar eclipse.*

By Adrienne Lai  
CHIEF METEOROLOGIST

At 3:29 p.m., April 8, 2024, masses of students piled onto Briggs Field, Killian Court, and the Lobby 7 steps to view the solar eclipse. Solar eclipse glasses were exchanged and pinhole experiments were attempted as the sky darkened to a slight gray. If you were unaware there was an eclipse, you would have simply thought it was a cloudy day as opposed to a partial solar eclipse where 92.6% of the Sun was blocked by the Moon (the Cambridge peak).

From MIT, you could see a small sliver of the Sun peek out behind the Moon. In the path of totality, the Moon was centered in front of the Sun, blocking its light (photosphere) and allowing the viewer to see the Sun's corona (outer atmosphere). There was complete darkness around you, which lasted a few minutes. This eclipse was particularly exciting to look at as the Sun is in its "active" period, which occurs in the middle of the process where the Sun's magnetic poles flip. There were more chances to see streams of the corona and magnetic loops!

Given that a total eclipse requires exact alignment between the Earth, Moon, and Sun, they are quite rare. The next total solar eclipse is expected to occur on August 12, 2026, with its path of totality covering areas in the North Atlantic (Greenland and Iceland) and Europe (Spain to Russia). Parts of North America (New England

will experience a partial eclipse. For the continental U.S., the next total solar eclipse won't happen until August 22, 2044, with a following coast-to-coast eclipse on August 12, 2045.

Eclipse glasses are worn to protect your eyes because even only a few of the Sun's rays are still powerful enough to damage your eyes. You are especially vulnerable during an eclipse because some of the wavelengths that trigger pain receptors in your eyes are blocked. As a result, you will not have your normal reflection to look away from, allowing damage to occur.

If you are experiencing any eye pain, retinal soreness, headaches, or anything else out of the ordinary after the eclipse even though you wore glasses, please see a doctor, as knock-off glasses are out there. A full list of trusted manufacturers can be found on the American Astronomical Society website.

For the next eclipse, an experiment you can try is making a pinhole camera, which projects the Sun's eclipse shape. All you need is a tiny hole through a piece of paper and a surface to project onto (a sidewalk works!). In effect, you have created a small lens that focuses and projects the Sun's light, allowing you to see its shape.

Also, if you are traveling to view the eclipse, prepare yourself for traffic delays as people move toward the path of totality and return home to view the eclipse. Since eclipses only happen once in a blue moon, take your chance when you get it.

SEE INSIDE *Spring Break Photo Spread*

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PHOTO COURTESY OF AMBER PENG

People gather on Kresge Oval to watch the solar eclipse Monday, April 8.

## MIT provides final update on Task Force 2021 and beyond

*Proposed by former president L. Rafael Reif, Task Force 2021 and Beyond was designed to "build a better MIT"*

By Tina Zhang  
NEWS EDITOR

In an email to the MIT community March 18, Provost Cynthia Barnhart PhD '88 and Executive Vice President and Treasurer Glen Shor announced a final update on the progress of implementing the recommendations suggested by Task Force 2021 and Beyond, a project proposed by former Institute president L. Rafael Reif in November 2021 to "build a better MIT" after the pandemic.

Since then, the MIT community implemented many of the recommendations outlined by Task Force 2021.

Barnhart said that MIT has improved the advising structure for undergraduates. The Undergraduate Advising Center (UAC) was introduced, with Dr. Diep Luu as its Associate Dean and Director. More professional advising staff and the emergence of an undergraduate advising hub are expected in the

next few years.

Additionally, Barnhart stated that the Task Force on the Undergraduate Academic Program (TFUAP) was developed to study the state of current general institute requirements (GIRs) and to update recent studies to review MIT's curriculum and pedagogy. The technical component of the GIRs currently require two semesters of calculus and physics, and one semester of chemistry and biology respectively.

Barnhart highlighted improvements in graduate student advising as well as professional development support for postdoctoral scholars interested in research. Barnhart emphasized that a new workshop "focused on comprehensive advising and mentoring of graduate students will debut in May," and the initiative will gradually expand to all schools of the Institute.

MIT has also started offering programs annually in "grant writing and mentoring" to support the career development of postdoc-

toral students. The Institute has "allocated new central resources to DLCIs to assist with the under-recovery of indirect costs for research grants from foundations and other non-profit sources," and a new app called Research@MIT has been developed to expedite the process of making requests, reviews, and reports.

Lastly, MIT has worked on "modernizing enterprise resource planning (ERP) platform and other key enterprise systems" to facilitate data-sharing and completing administrative actions.

Barnhart said that there has been progress made towards the central goal of "building a better MIT" as a result of the recommendations of Task Force 2021. She noted that the MIT community in the past three years has increased funding to support graduate students and research endeavors and made significant strides in improving advising resources and technology on campus.

### CPW 2024 happening April 11-14

Campus Preview Weekend (CPW) will take place from April 11 to 14 for 3.14 days. CPW is organized by the MIT Admissions Office in collaboration with campus academic offices, student organizations, dormitories, and living communities, and academic departments. Prospective MIT freshmen will arrive on campus for CPW and participate in a wide variety of social and informational events.

The MIT Admissions Office will host many different events, including 45-minute campus tours led by current students, CPW Orientation, and Where Will I Live, where current students discuss their living communities.

Some events hosted by student groups include the "CPW Acapella Concert," "an energetic night of music and joy" composed of short performances from each of MIT's ten acapella groups, the annual "Maseeh Waffle Night," where pre-frosh can immerse themselves in "unlimited Belgian waffles, chocolate, and strawberries," and "Next Haunt," which is advertised as follows— "Are you excited for Halloween? Yes, it's April, but ARE YOU EXCITED FOR HALLOWEEN? Or are you interested in spooky treats, clever tricks, and/or making new friends and winning with them? Then swing by Next Haunt, where we'll have tons of snacks and candy and puzzles to solve!" More information about CPW can be found here.

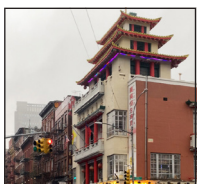
— Tina Zhang

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SPORTS BLITZ

Friday, April 5th:

- Women's Lacrosse defeated Bowdoin College 12-6

Saturday, April 6th:

- Women's Openweight Crew placed V8: 2nd; 2V8: 1st; 3V8: 3rd; V4: 2nd against Boston College
- Women's Lightweight Crew placed V8: 1st; V4: 3rd against Simmons and Bates
- Men's Heavyweight Crew placed V8: 1st; 2V: 1st; 3V4: 1st against Marist College
- Sailing placed 5th at the Open New England Team Race Championships
- Sailing placed 6th at the Yale Women's Team Race
- Sailing placed 8th at the Mystic Lake Team Race
- Softball defeated Babson College 11-0
- Women's Tennis defeated Clark University 9-0
- Softball lost to Babson College 0-4
- Men's Lacrosse defeated United States Coast Guard Academy 16-3
- Men's Volleyball defeated American International College 3-0
- Men's Tennis lost to Bowdoin College 3-6
- Women's Lacrosse defeated Mount Holyoke College 25-2

Sunday, April 7th:

- Men's Track and Field participated in the Amherst Spring Fling
- Women's Track and Field participated in the Amherst Spring Fling
- Men's Lightweight Crew placed 3rd at San Diego Crew Classic
- Baseball lost to WPI 4-6
- Baseball lost to WPI 6-15

Tuesday, April 9th:

- Baseball defeated Springfield College 4-3

MIT COMMENCEMENT 2024

Get involved in COMMENCEMENT May 29-31, 2024

Celebrate the Class of 2024

Assist and support graduates and their guests

Scan the QR code or follow the link for more info and to sign up!

bit.ly/C24signup



ALEXA SIMAO - THE TECH

MINCE gives out banana flavored snacks to celebrate the Banana Lounge’s “6ananaversary” Thursday, April 4.

Upcoming Sports Events

FRIDAY 9

Women's Track and Field at David Hemery Valentine Invitational

Women's Swimming and Diving at BU Winter Open

Men's Swimming and Diving at BU Winter Open

Men's Squash at MASC Championships

SATURDAY 10

Men's Track and Field at David Hemery Valentine Invitational

Men's Track and Field Gordon Kelley Invitational at MIT 10 a.m.

Women's Track and Field Gordon Kelley Invitational at MIT 10 a.m.

Rifle at Norwich University 12 p.m.

Men's Tennis at Boston University 1 p.m.

Women's Basketball vs Smith College 1 p.m.

Men's Basketball vs WPI 3 p.m.

Women's Tennis at Brandeis University 3 p.m.

SUNDAY 11

Rifle vs Ohio State University 10 a.m.

WEDNESDAY 14

Men's Tennis vs Merrimack College 3 p.m.

Women's Basketball

at Wheaton College 6 p.m.

Men's Volleyball vs Elms College 7 p.m.

Men's Basketball at Clark University 7 p.m.

SATURDAY 17

Women's Track and Field at Springfield College Triangle Classic

Men's Track and Field at Springfield College Triangle Classic

Rifle at Army 8 a.m.

Women's Tennis at Southern New Hampshire University 10 a.m.

Women's Basketball at Salve Regina University 1 p.m.

at Salve Regina University 1 p.m. vs Vassar College 1 p.m.

Men's Basketball vs Vassar College 3 p.m.

Men's Volleyball vs Endicott College 5 p.m.

SUNDAY 18

Men's Tennis at RPI 2 p.m.

MONDAY 19

Softball at Brown University 10 a.m.

WEDNESDAY 21

Women's Basketball NEWMAC Quarterfinal



ALEXA SIMAO - THE TECH

Mystery boxes with a variety of items were hidden around campus for April Fool's day.



WORLD & NATION is a two-page column featuring news articles syndicated from a selection of major newspaper outlets, covering topics of public interest and critical information which extend beyond the bounds of THE TECH's coverage as centered around the MIT and local community. Ownership of syndicated content is retained under their original respective publications, and is republished in this format to serve as an easily-accessible, printed digest for THE TECH's readership.

The column consists of two pages, with Side A focused on US news and politics and Side B on topics of international concern. The articles featured here are abridged as to contain only their most essential points; readers are directed to read more about an article from its original publication.

## After Trump broadside, surveillance bill collapses in the House

Right-wing House Republicans on Wednesday blocked legislation to extend an expiring warrantless surveillance law that national security officials call crucial to gathering intelligence and fighting terrorism, dealing Speaker Mike Johnson a stinging defeat after former President Donald J. Trump urged lawmakers to kill the bill.

In an upset on the House floor, the measure, which would extend a section of the Foreign Intelligence Surveillance Act known as Section 702, failed what is normally a routine procedural test. On a vote of 228 to 193, 19 House Republicans, most aligned with the ultraconservative House Freedom Caucus, joined Democrats in opposing its consideration.

— Luke Broadwater & Charlie Savage, FROM THE NEW YORK TIMES  
ORIGINALLY PUBLISHED APRIL 10, 2024

## Magnitude 4.8 earthquake strikes northeastern U.S.

A magnitude 4.8 earthquake shook the northeastern United States on Friday morning. The earthquake was felt from Boston down to Baltimore at 10:23 a.m. ET, according to the U.S. Geological Survey.

In New York City, where tremors were felt for more than 30 seconds, there were no immediate reports of injuries or damage, but the quake triggered numerous delays and temporary closures of transportation infrastructure in the area.

"Every year tens of thousands of migrants leave the Horn of Africa, mainly from Ethiopia and Somalia trying to reach the Gulf nations," Ndege said.

— Dan Mangan & Kevin Breuninger, FROM CNBC  
ORIGINALLY PUBLISHED APRIL 5, 2024

## Judge blocks Trump's lawyers from naming witnesses in documents case

Granting a request by federal prosecutors, the judge overseeing former President Donald J. Trump's classified documents case ordered his lawyers on Tuesday to redact the names of about two dozen government witnesses from a public version of one of their court filings to protect them against potential threats or harassment.

In a 24-page ruling, the judge, Aileen M. Cannon, told Mr. Trump's lawyers to refer to the witnesses in their filing with a pseudonym or a categorical description — say, John Smith or F.B.I. Agent 1 — rather than identifying them by name. The special counsel, Jack Smith, had expressed a deep concern over witness safety, an issue that has touched on several of Mr. Trump's criminal cases.

— Alan Feuer, FROM THE NEW YORK TIMES  
ORIGINALLY PUBLISHED APRIL 9, 2024

## Boeing whistleblower's safety claims under FAA investigation, reports say

Claims that Boeing knew of safety flaws in the manufacture of one of its largest passenger jet aircraft, but covered them up to speed production, are under investigation by the Federal Aviation Administration (FAA), according to a reports.

The information came from a whistleblower inside the beleaguered US aircraft maker, and relates to the structural integrity of the 787 Dreamliner jet, a report published by the New York Times alleges.

The engineer, identified as Sam Salehpour, told the newspaper that sections of the fuselage of the Dreamliner were improperly fastened together and could eventually break apart mid-flight.

— Richard Luscombe, FROM THE GUARDIAN  
ORIGINALLY PUBLISHED APRIL 9, 2024

## Biden, Kishida agree to tighten military, economic ties to counter China

President Biden and Prime Minister Fumio Kishida of Japan announced a range of moves on Wednesday to further enhance military, economic and other cooperation between the two longtime allies as part of the president's efforts to counter China's aggressive actions in the Indo-Pacific region.

During a pomp-filled ceremony honoring the visiting Japanese prime minister, the president said the United States and Japan would create an expanded defense architecture with Australia, participate in three-way military exercises with Britain and explore ways for Japan to join a U.S.-led coalition with Australia and New Zealand.

— Peter Baker & Michael D. Shear, FROM THE NEW YORK TIMES  
ORIGINALLY PUBLISHED APRIL 10, 2024

# Az. Supreme Court reinstates near-total 1864 abortion ban

Holly Honderich

FROM BBC

ORIGINALLY PUBLISHED APRIL 10, 2024

The Arizona Supreme court has ruled that the state can enforce a 160-year-old near-total abortion ban.

The 1864 law - which precedes Arizona becoming a state - makes abortion punishable by two to five years in prison, except when the mother's life is at risk. The ruling could shutter all clinics in the state, and affect both women's healthcare and the coming election.

Arizona voters may be able to undo the ruling in a November referendum.

The decision follows months of legal wrangling about whether the pre-statehood law could be enforced after years of dormancy. Many argued it had been effectively nullified by decades of state legislation, including a 2022 law that allows abortions until 15 weeks of pregnancy.

Arizona's top court agreed to re-

view the case in August 2023 after a right-wing law firm, Alliance Defending Freedom, appealed against a lower court ruling that said the more recent law should stand.

In a 4-2 ruling on Tuesday, the state supreme court overturned that decision. It said the 1864 law was "now enforceable" because there were no federal or state protections for the procedure.

The Alliance Defending Freedom joined anti-abortion activists in celebrating the decision, saying the "significant" ruling would "protect the lives of countless, innocent unborn children".

Arizona's Supreme Court delayed enforcement of the law for 14 days, and the justices sent the case back to a lower court to hear further arguments.

But it remains unclear how the law will be enforced.

Governor Katie Hobbs, a Democrat, issued an executive order last year that placed the matter of enforcing abortion law in the hands of state attorney general Kris Mayes - a

fellow Democrat who has promised that Arizonans will not be prosecuted for getting or performing an abortion.

Ms Mayes reiterated that promise on Tuesday, calling the law "draconian."

"Today's decision to reimpose a law from when Arizona wasn't a state, the Civil War was raging, and women couldn't even vote will go down in history as a stain on our state," she said, criticism that was soon echoed by the White House and other leading Democrats.

Some Arizona Republicans also expressed concerns about the ruling. Kari Lake, a close ally of Donald Trump and a Republican candidate for the state's seat in the US Senate, said she opposed the decision.

She called on Governor Hobbs and the state legislature to find a "common sense solution."

Ruben Gallego, Ms Lake's Democratic opponent, noted Ms Lake had previously supported the ban, pointing to a 2022 interview where she called the 1864 law "great."

# To cut cancer risks, E.P.A. limits chemical plant pollution

Lisa Friedman

FROM THE NEW YORK TIMES

ORIGINALLY PUBLISHED APRIL 9, 2024

More than 200 chemical plants across the country will be required to curb the toxic pollutants they release into the air under a regulation announced by the Biden administration on Tuesday.

The regulation is aimed at reducing the risk of cancer for people living near industrial sites. This is the first time in nearly two decades that the government has tightened limits on pollution from chemical plants.

The new rule, from the Environmental Protection Agency, specifically targets ethylene oxide, which is used to sterilize medical devices, and chloroprene, which is used to make rubber in footwear.

The E.P.A. has classified the two chemicals as likely carcinogens. They are considered a top health concern in an area of Lou-

isiana so dense with petrochemical and refinery plants that it is known as Cancer Alley.

Most of the facilities affected by the rule are in Texas, Louisiana and elsewhere along the Gulf Coast as well as in the Ohio River Valley and West Virginia. Communities in proximity to the plants are often disproportionately Black or Latino and have elevated rates of cancer, respiratory problems and premature deaths.

Michael S. Regan, the administrator of the E.P.A., traveled last year to St. John the Baptist Parish in Louisiana, the heart of Cancer Alley, to announce his agency's intention to limit pollution from the plants.

In a telephone call with reporters on Monday, Mr. Regan recalled that he had been struck by the concentration of chemical plants and by the way they had affected families for decades. "I saw firsthand how the multigenerational and widespread effects of pollution were affecting the

health of the local community," Mr. Regan said.

He said that the rule would cut toxic pollutants by 6,200 tons annually and reduce emissions of ethylene oxide and chloroprene by 80 percent.

Under the rule, chemical manufacturers must monitor vents and storage tanks for ethylene oxide and chloroprene emissions and plug any leaks.

Plants will also be required to reduce emissions of four other toxic chemicals: benzene, which is used in motor fuels as well as oils and paints; 1,3-butadiene, which is used to make synthetic rubber and plastics; and ethylene dichloride and vinyl chloride, both of which are used to make a variety of plastics and vinyl products.

One year after monitoring begins, facilities will be required to submit quarterly data to the E.P.A. The data will be made public so that communities can understand any risks they face.

# Harvard Law student govt. passes divestment resolution

Nick Stoico

FROM THE BOSTON GLOBE

ORIGINALLY PUBLISHED MARCH 29, 2024

Harvard Law School's student government on Friday passed a resolution calling on the university to divest from Israel amid its bombardment of Gaza in the ongoing Israel-Hamas war, a vote that prompted two members of the board to resign.

The resolution calls for the Harvard Management Company, which oversees the university's \$50 billion endowment, "to divest completely from weapons manufacturers, firms, academic programs, corporations, and all other institutions that aid the ongoing illegal occupation of Palestine and the genocide of Palestinians."

The vote passed with 12 members voting in favor, four against, and three abstaining, according to a copy of the resolution.

Harvard Law student Swap Agrawal, who authored the resolution, said members of the body

have heard from students who "felt strongly that this call was necessary to put pressure on things to change."

"Palestinian students at [Harvard Law School] have lost dozens of family members in the ongoing genocide," Agrawal said in a statement Friday night.

He said the resolution was also motivated by the International Court of Justice's announcement in January that it found it is "plausible" that Israel has committed acts that violate the Genocide Convention, and "many law students hoped that the situation in Gaza would improve."

"Students are deeply troubled that money held in trust for their benefit is being used to support the genocide."

Harvard spokesman Jason Newton said the university's leadership has "made clear that it opposes calls for a policy of boycotting Israel and its academic institutions."

Two members of the student government, Regina De Nigris

and Cameron Adkins, resigned from the student-run board following the vote, saying they "strongly disagree" with the resolution, according to a copy of their resignation letter.

The two students wrote that the resolution "was drafted without meaningful opportunity for interested students to provide input or express their potential concerns."

"Given the importance of the issue, rushing this process is particularly inappropriate and unacceptable," they wrote.

The organization Law Students for a Free Palestine released a statement Friday celebrating the student government's move as a "divestment milestone."

"This resolution is a feat of student organizing, having been passed after an academic year marked by systematic repression, surveillance, and professional persecution of pro-Palestine students by University administration and right-wing agitators," the group said.



# Court rules Switzerland violated human rights in climate case

Laura Paddison

FROM CNN  
ORIGINALLY PUBLISHED APRIL 9, 2024

An international court in France on Tuesday ruled Switzerland’s failure to adequately tackle the climate crisis was in violation of human rights, in a landmark climate judgment that could have a ripple effect across the globe.

The European Court of Human Rights (ECHR) in Strasbourg, France delivered its ruling in a case brought by more than 2,000 Swiss women, the majority of whom are in their 70s, against Switzerland’s government. They argued that climate change-fueled heat waves undermined their health and quality of life, and put them at risk of dying.

The court ruled that the Swiss government had violated some of the women’s human rights due to “critical gaps” in its national legislation to reduce planet-heating emissions, as well as a failure to meet past climate targets.

This amounted to a breach of the

women’s rights to effective protection from the “the serious adverse effects of climate change on lives, health, well-being and quality of life,” the court said in a statement.

It marks the first time the court has ruled on climate litigation. There is no right of appeal and the judgment is legally binding.

Experts say the court’s ruling could bolster other human rights-based climate cases pending before international courts and could open the flood gates for numerous similar lawsuits to be launched in the future.

“Today’s rulings against Switzerland sets a historic precedent that applies to all European countries,” Gerry Liston, a lawyer at Global Legal Action Network, which supported the Portugal case, said in a statement. “It means that all European countries must urgently revise their targets so that they are science-based and aligned to 1.5 degrees. This is a massive win for all generations.”

The ruling could also force Switzerland to reduce its consumption

of fossil fuels more rapidly. Fossil fuels are the main driver of human-caused climate change. Vesselina Newman, from the environmental lawyers organization ClientEarth, said this result “from one of the world’s highest courts sends a clear message: governments must take real action on emissions to safeguard the human rights of their citizens.”

Switzerland’s Federal Office of Justice said it “takes note” of the judgement.

“The comprehensive judgment will be analyzed with the authorities concerned and the measures which Switzerland has to take for the future will be examined,” it said in a statement to CNN.

The court also delivered judgments on two other claims, one brought by a municipal mayor against the French government and a third, the largest and highest-profile, by six young people in Portugal against 32 European countries. Those two claims were ruled “inadmissible.”

## 25 civilians killed in militia attack in eastern Congo

The death toll from an attack in a village in eastern Democratic Republic of Congo’s Ituri province rose to 25 on Sunday, a local chief and civil society leader said, after a government spokesman and a U.N. document confirmed the attack on Saturday.

The Cooperative for the Development of the Congo (CODECO) group, one of many militias operating in the conflict-ridden east, carried out the killings in the village of Galayi, 70 km (45 miles) northwest of the city of Bunia, they said.

Fifteen bodies were discovered on Sunday, in addition to 10 bodies recovered on Saturday, Banzala Danny, a local chief, and Vital Tungulo, a civil society leader, told Reuters.

— FROM REUTERS  
ORIGINALLY PUBLISHED APRIL 7, 2024

## At least 38 migrants die in shipwreck off Djibouti

At least 38 migrants, including children, have died in a shipwreck off the Djibouti coast, the United Nations migration agency said on Tuesday. The International Organization for Migration (IOM) said at least six other people were missing and presumed dead, and that 22 survivors were being assisted by the IOM and local authorities.

Yvonne Ndege, regional spokesperson for the IOM, said the shipwreck happened about 200 metres off Djibouti and that the boat carrying the migrants had left Yemen around 2 a.m. local time on April 8.

It sank about two hours later with around 66 people on board, predominantly from the Horn of Africa region. They were believed to be mostly Ethiopian nationals, she said.

— FROM REUTERS  
ORIGINALLY PUBLISHED APRIL 9, 2024

## Jacob Zuma, South Africa’s scandal-ridden ex-president, is running again

Jacob Zuma, who resigned as South Africa’s president in shame in 2018, is now staging his biggest comeback act yet by running in next month’s parliamentary elections with an upstart opposition party at the top of its ticket — the slot designated for a party’s presidential contender.

Mr. Zuma’s participation in the race is a blow to a faltering African National Congress — the party he once led — which has governed the country since the end of apartheid three decades ago. The A.N.C. and its leader, the country’s current president, Cyril Ramaphosa, are now struggling to win back the trust of voters disillusioned by a stagnant economy and years of corruption.

— Lynsey Chutel, FROM THE NEW YORK TIMES  
ORIGINALLY PUBLISHED APRIL 10, 2024

## South Korean parliamentary election projected to hand defeat to leader

In the two years since he was elected, President Yoon Suk Yeol has made his mark in foreign policy, forging deeper ties with the United States and Japan. But his business-friendly domestic agenda has been stalled by his own missteps and an opposition-controlled Parliament.

Now, Mr. Yoon is facing the threat of being a lame duck for the remainder of his single, five-year term. In a parliamentary election held on Wednesday, voters were projected to have handed Mr. Yoon and his party a crushing defeat, giving the opposition one of its biggest electoral victories in recent decades. Polls closed at 6 p.m. and official results were expected on Thursday morning.

— Choe Sang-Hun, FROM THE NEW YORK TIMES  
ORIGINALLY PUBLISHED APRIL 9, 2024

## Italy hydroelectric plant explosion kills at least three workers

An explosion at a hydroelectric plant in northern Italy has killed at least three workers and injured five others, a regional fire chief said. At least four other people are missing. The blast on Tuesday was at power company Enel’s decades-old Bergi plant, south of Bologna, and happened during maintenance work, according to authorities. Regional fire chief Francesco Notaro told local media that part of the nine-story underground structure collapsed, started a fire, causing flooding at depths of up to 60 meters (200 feet).

Video provided by firefighters showed smoke rising from the underground at the lakeside plant. “This is a historic power plant for us,” Marco Masinara, the mayor of the nearby town of Camugnano, told local media.

— FROM ASSOCIATED PRESS  
ORIGINALLY PUBLISHED APRIL 9, 2024

## European Parliament approves migration deal after years of deadlock

The European Parliament on Wednesday voted in favor of a major migration deal, bringing the landmark legislation close to approval as Europe’s political center tries to fend off an ascendant far right ahead of key elections.

The package aims to overhaul the European Union’s approach to migration and asylum and resolve a long-standing source of tension: some E.U. countries doing more than others. It asks front-line countries such as Greece, Spain and Italy to build detention centers, speedily process claims and quickly deport unsuccessful claimants. Other countries are obligated to resettle more people or provide financial compensation — a provision known as a “solidarity mechanism.”

— Emily Rauhala & Beatriz Ríos, FROM WASHINGTON POST  
ORIGINALLY PUBLISHED APRIL 10, 2024

# Turkey and Israel announce trade barriers on each other

Suzan Fraser

FROM AP NEWS  
ORIGINALLY PUBLISHED APRIL 9, 2024

Turkey and Israel announced trade barriers on each other Tuesday as relations deteriorated further amid the war in Gaza.

Turkey, a staunch critic of Israel’s military actions in the territory, announced that it was restricting exports of 54 types of products to Israel with immediate effect. They include aluminum, steel, construction products, jet fuel and chemical fertilizers. In response, Israel said it was preparing a ban on products from Turkey.

The announcements came a day after Turkish Foreign Minister Hakan Fidan said Israel had barred Turkish military cargo planes from joining an operation to airdrop humanitarian aid to Gaza and vowed to respond with a series of measures against Israel until it declares a cease-fire and allows aid to flow in without interruptions.

“There is no excuse for Israel to

block our attempt to deliver aid by air to starving people of Gaza,” Fidan said.

Turkish President Recep Tayyip Erdogan’s government, which suffered major setbacks in local elections last month, is faced with intense pressure at home to halt trade with Israel. Critics accuse the government of engaging in double standards by leveling strong accusations against Israel while continuing lucrative commercial relations.

Erdogan, whose ruling party has roots in Turkey’s Islamic movement, has been an outspoken critic of Israel’s treatment of the Palestinians since taking office in 2003.

The Turkish leader stepped up his criticism of Israel following its military offensive in Gaza, describing Israel’s actions as war crimes verging on “genocide” and asserting that the Hamas militant group, considered a terrorist organization by Israel, the United States and European Union, is fighting for the liberation of its lands and people.

In a post on X, Israeli Foreign Minister Israel Katz said Erdogan was “once again sacrificing the economic interests of the people of Turkey for his support of the Hamas murderers in Gaza.”

In the same post, he said he had contacted organizations in the U.S. and asked them to stop investing in Turkey and refrain from importing Turkish goods.

Hamish Kinnear, senior Middle East and North Africa analyst at Britain-based risk intelligence company Verisk Maplecroft, said domestic considerations were behind Turkey’s decision to slap trade restrictions on Israel, saying Erdogan’s ruling party was trying to “rally its base in the wake of defeat in local elections.”

“Reduced bilateral trade will be the result, especially if Israel retaliates with trade restrictions of its own,” Kinnear said. “Turkey’s government has likely made the calculation that damaged trade ties are worth it for the potential gain in domestic political support.”

# China’s Xi hosts former Taiwan president in Beijing

Nectar Gan & Wayne Chang

FROM CNN  
ORIGINALLY PUBLISHED APRIL 10, 2024

Chinese leader Xi Jinping held rare talks on Wednesday with a former president of Taiwan who supports closer ties with China, a highly unusual meeting just weeks before the democratic island swears in a new leader Beijing openly loathes.

Ma Ying-jeou, who led Taiwan from 2008 to 2016 and is currently in Beijing on an 11-day tour across China, met Xi on Wednesday afternoon, state broadcaster CCTV reported.

The carefully choreographed moment is steeped in political symbolism: it’s the first time a former president of Taiwan has been hosted by China’s top leader in Beijing since Chiang Kai-shek’s Kuomintang (KMT) fled to Taipei in 1949.

It is also the first meeting between Xi and former KMT leader Ma, since their historic summit in Singapore in 2015.

But their reunion also highlights the widening political divide across the Taiwan Strait — and how Xi’s ever more aggressive posture toward Taipei has driven more Taiwanese away from China.

In his opening remarks, Xi praised Ma for opposing “Taiwan independence,” promoting cross-strait exchanges and agreeing that both sides of the strait belong to “one China.”

“Compatriots on both sides of the Taiwan Strait are all Chinese people. There is no grudge that cannot be resolved, no issue that cannot be discussed and no force that can separate us,” Xi told his guest. “External interference cannot stop the historic trend of the reunion of the family and the country.”

In response, Ma said that although two sides of the strait developed under different systems, the people both belong to the Chinese nation.

“If a war breaks out between the two sides of the Taiwan Strait,

it will be an unbearable burden for the Chinese nation,” he said. “I sincerely hope that both sides respect the values and way of life treasured by the people and maintain peace across the strait.”

But the appeal of a shared Chinese identity has waned considerably in Taiwan as Xi ramps up military, economic and diplomatic pressure on its democratic island neighbor.

That trend was underscored in January, when Taiwanese voters shrugged off warnings by China and handed the ruling Democratic Progressive Party (DPP) a historic third term by electing Lai Ching-te, who has long faced Beijing’s wrath for championing Taiwan’s sovereignty.

Since then, Beijing has poached another of Taipei’s dwindling number of diplomatic allies and ramped up patrols around Taiwan’s frontline islands after two Chinese fishermen drowned in nearby waters, while continuing to fly its fighter jets near the self-ruled island.





“chinatown, nyc”

PHOTO COURTESY OF AN ANONYMOUS STUDENT



“Beta Theta Pi Spring Break Midwest Roadtrip - Colorado Rocky Mountains”

PHOTO COURTESY OF HENRY HEIBERGER



“Banana bread so good that it’s a-peeling!”

PHOTO COURTESY OF KANNA PICHAPPAN



“Marco Cesaratto and Maya Makarovsky pose on El Peñón de Guatapé in Colombia”

PHOTO COURTESY OF MARCO CESARATTO



# SPRING BREAK 2024



“Old San Juan, Puerto Rico”

ALEXA SIMAO - THE TECH



PHOTO COURTESY OF THE B1NERS

“The B1ners (residents of Burton One) went to Cartagena, Colombia this spr1ng break. And it went HARD.”



PHOTO COURTESY OF MUHUA XU



ALOR'S LORE

You see right past me—or through me

An open letter to a person who won't read it

By Alor Sahoo  
CAMPUS LIFE EDITOR

Here's the thing about Michael [1], henceforth just Michael or Mike. He's nice, nice enough. We get along, and when we don't, we resolve things — group project division, being too loud in a shared space, and so on — pretty maturely. Enough to be friends...except that's a loaded word that means more than being friendly. The word would be an acquaintance, usually.

Maybe he thinks it's just silly semantics to hyper-analyze the arbitrary labels people put on relationships, which is fair. Except that Mike also latches onto the friend label for dear life, as if a friend would 1) define me by a few static traits and 2) expect me to conform to those expectations in perpetuity. For some reason or another, his mental cache of me is stale and it simply won't bother refreshing.

I'm not going to pretend that I didn't contribute — from my monolithic pop music tastes to general impulsive goofiness, I created a brand for myself: the broadly unserious person. From random goofy late-night talks to Taylor Swift-themed emails/Piazza posts and more, I cemented this image in Mike's mind,

didn't I? I figured that he'd realize that his mental images of me are, well, just images: flat 2D shadows projected from my ever-evolving n-dimensional reality. Even if I have a brand, why can't I be off-brand without it being weird?

Lately, this brand narrowed, with Mike treating me like I'm made of glass. He'll make small talk, but he either sees right through me, or right past me. And that small talk is exhausting. I'm a great listener, but I can barely get a word back. Ever.

But that's what friends do, right?

Fine, maybe I exaggerated. Mike'll sometimes start with the classic "Hey, what's up?" before diving into whatever he actually wants to talk about. I used to hop by Mike's hangout spots to reciprocate — you know, because friends — but between the awkward "hmm"s to sudden shushing upon my approach to the awkward silence, I was clearly external to the clique. Strangely, this is how I ended up learning so much about Mike and why he barely knows me. But I shouldn't be an outsider, since I know about his \*\*\*\* and how he \*\*\*\*, both of which are clearly close-friends-only knowledge. Apparently, I'm just your sounding board, the crystal glass that you mess around with to echo what you want to hear.

Then, there was \_\_\_\_\_. I literally made a mental list of who to tell about \_\_\_\_\_ and Mike... he just wasn't on it. I still cringe thinking about how I would've told him, if I did. Mike would probably say "oh, um..." and short-circuit. Not just in the moment (which is understandable, since real-time processing is hard,) but also long-term. To him, a goofy-enthusiast-prankster-y person like me can't ever experience and vent about anything serious. So I left Mike in the dark — despite worries about his reaction when he found out about \_\_\_\_\_ through other people. When he did, he drifted even more into an acquaintance-like aloofness, as if avoiding my fragile glass self was safer than supporting it.

Honestly, that was the end. The end of the accidental exclusion, the end of anger, and the culmination of weariness. Mike will stay in his circles. I'll stay in mine. Maybe I'll carve mine out more, and make a little moat so Mike can't cross over next semester. For what it's worth, I didn't mind getting acquainted, but it wasn't meant to be.

Sorry, Mike.

[1] This is a random name and doesn't necessarily refer to a single individual; he is also fictionalized.

Congratulations!



Congratulations to Marcus Bluestone '26 and Kayla Zlotnick '25 on their engagement!

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CONCERT REVIEW

Bruce Liu showcases his virtuosity in Boston debut

Liu is a rising star in the classical music world

Bruce Liu  
Piano Recital  
Presented by Celebrity Series of Boston  
Mar. 23, 2024  
NEC Jordan Hall

By Vivian Hir  
EXECUTIVE EDITOR

Bruce Liu made his Boston debut in New England Conservatory's (NEC) Jordan Hall on Saturday night. The repertoire was well-chosen, as each piece focused on a different technique that exemplified his virtuosity. From the Baroque to the Impressionist eras, Liu's magnificent renditions of challenging pieces held the packed audi-

ence spellbound.

The 2021 winner of the 18th Chopin Competition, Liu is a rising star in the classical world. After his breakthrough, Liu had his first world tour in 2022, collaborating with major orchestras such as the San Francisco Philharmonic. In 2023, Liu released Waves, a Deutsche Grammophon album featuring the works of Jean-Philippe Rameau, Charles-Valentin Alkan, and Maurice Ravel. Liu played some pieces from Waves for this performance, including selected short works by Rameau and Ravel's Miroirs.

Liu began the performance with a selection of Rameau's works. He played the trills in "Les Tendres Plaintes" elegantly, as they sounded crystal clear. After "Plaintes" followed "Les Cyclopes," a piece that had a lovely staccato. It was wonderful to see Liu play the arpeggios so well, lifting his fingers off the keys gracefully. He played the accents with a flourish and strong emphasis on the downbeat notes.

On the other hand, "Menuets I et II" had a playful nature. Liu embodied this



PHOTO COURTESY OF CHRISTOPH KÖSTLIN

Press photo of Bruce Liu for Waves, a Deutsche Grammophon album.



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BALLET REVIEW

# The clock strikes opening night at the Boston Ballet’s Cinderella

Reflections on the Boston Ballet opening night

Cinderella

Choreographed by Sir Frederick Ashton

Directed by Mikko Nissinen and Ming Min Hui

Citizens Opera House

March 14th-24th, 2024

By Karie Shen & Maya Bose

Maya Bose '27 and Karie Shen '27 attended the Boston Ballet opening night showing of Cinderella on March 14, 2024.

**Shen:** Watching Cinderella as a ballet was super exciting. We all know the classic fairytale and I was looking forward to how it would be translated into a ballet.

**Bose:** Me too! To be honest, I expected the performance to be more serious and focused on Cinderella's mistreatment by her stepsisters, like the original fairytale. However, it was obvious from the first scene that the ballet had a more comedic interpretation of the two stepsisters. The ballet opened with a humorous back-and-forth struggle between the stepsisters, where their distinct, ridiculous personalities shone through, making me laugh.

Instead of being villains, the stepsisters provided comic relief and had multiple entertaining scenes scattered throughout the show, which really heightened my enjoyment of the story. It takes a lot of talent to be funny purely through pantomime, as well as dance awkwardly on purpose; the two sisters were probably my favorite performers.

**Shen:** To be frank, I only noticed that one of the stepsisters was played by a man the

whole time. The program mentioned that the Boston Ballet partnered with the Massachusetts Transgender Political Coalition to “evolve gender portrayals in classical ballet.”

I thought this was a great collaboration because the dancers and the choreography worked really well together. Ballet is such a technical, clean-cut style of dance that makes the dancers look graceful and coordinated. It was a fun play on ballet to see the stepsisters intentionally underperform the dances and show how ungraceful the characters were, while still demonstrating their flexibility and coordination as dancers. I thought ballet was the perfect medium for this.

**Bose:** I agree—the sisters were definitely a highlight for me. However, I missed the original elements surrounding the fairy godmother and the midnight deal. For instance, Cinderella arrived in a normal carriage rather than a pumpkin-themed one, and there were no helpful mice friends. Instead, some random fairy-like characters representing the four seasons were introduced, who didn’t mesh well with the original storyline. In my opinion, these characters were unnecessary.

I also would have liked to see the classic blue Cinderella gown, rather than the silver tutu she transformed into instead. I actually liked some of the background dancers’ old-fashioned, ball gown costumes more than Cinderella’s. However, I thought the interpretation of the clock striking midnight was done very well! The spotlight racing frantically across the stage in search of Cinderella paired with the booming clock in the background created a dramatic, tense atmosphere which I loved. Additionally, changing the famous glass slippers into sparkling ballet shoes was a nice touch.

**Shen:** I agree with the seasonal fairy sentiment. The costumes and dances were very pretty and represented the seasons well, but they didn’t play any part in the plot. It reminded me of Act II of The Nutcracker, when the sweets from around the world dance together. There was also a jester at the royal ball and a character dressed in a regal red costume, who I thought was the prince but was not...Over-

all, however, the costume design by Christine Haworth was lovely.

**Bose:** Of course, the dancing itself was great too. The performers were elegant and managed to convey a lot of expression and humor through their movements. My favorite scene by far was Cinderella’s entrance to the ball. She arrived wearing all white with a long, sheer cape draped over her shoulders that was artfully held up by four attendants behind her. As Cinderella walked gracefully down the steps, the billowing cape sparkled and curved through the air.

It was a quiet, solemn scene that was full of emotion. You could see her hesitate as she descended the staircase while looking straight ahead at the prince, as if the rest of the ballroom didn’t exist. I loved it. Throughout the ballet, Cinderella had been practicing dance steps secretly in her home and was finally able to perform these same steps after she entered the ball. I thought that was a nice touch. The scene was poignant and very well done.

**Shen:** Mine was definitely the partner dance with Cinderella and the Prince. Their white, glittery outfits matched perfectly and the music (Sergei Prokofiev’s Cinderella Op. 87, No. 36, Duet of the Prince and Cinderella) created this sort of swelling atmosphere. It was powerful, peaceful, and melancholy at the same time, as if there was an awareness that the magic would end and they had limited time. It was a type of scene where the world fell away for them.

And Ji Young Chae is so lovely. She’s a principal dancer at Boston Ballet and danced as Cinderella in this ballet. Even in her simple rags, she made Cinderella look so beautiful. I saw her as the Sugar Plum Fairy in The Nutcracker as well and I can’t wait to see more of her performances.

**Shen and Bose:** Despite the unexpected deviations from the classic Disney storyline, we loved the artistry that went into the performance — from the costume and set designs to choreography and music. We would highly recommend Boston Ballet’s Cinderella, especially for people new to ballet!

energy, as his fingers made leaps in the air like a dancer’s prance without being exaggerated. His gentle nods and slight head movements further channeled the nonchalant spirit in “Menuets,” encouraging listeners to move along to the triple meter at an andantino tempo. In “Les Sauvages,” Liu effectively highlighted the various aspects of the piece by playing the melody boldly while sprinkling intricate trills at the same time.

In “Gavotte et six doubles,” Liu finely captured the piece’s somber yet gentle quality. Though “Gavotte” started with a jovial mood, he ended the piece with an interesting twist: a minor key that made the piece not feel fully resolved. As a whole, Liu performed Rameau’s works with great precision to detail, from the well-balanced polyphony to the gliding ascending notes.

Afterwards, Liu performed Frederic Chopin’s Variations on “Là ci darem la mano” from Mozart’s Don Giovanni. In Largo, the first variation, Liu played the descending chromatic notes with some rubato, which helped to create a dreamy sound. Liu smoothly transitioned from one variation to the next, gradually increasing the tempo so that he ended up entering a state of fervor that reflected Don Giovanni’s character.

The accents sounded grand, while the sustaining chords had traces of Don Giovanni’s pompous personality. His playing was impressive, whether it was the crossing over of hands or the rapid succession of descending notes at the end. When

he finished playing, the audience stood up to applaud, with yells of “Bravo!”

After intermission, Liu played Ravel’s Miroirs, an iconic impressionistic piano work. Liu played the rolling chromatic notes in “Noctuelles” as if they were like ripples of water, constantly changing shape and direction. Liu ended “Noctuelles” with a well-developed crescendo buildup to the trills, as this created tension in the piece. While “Noctuelles” sounded mysterious, “Oiseaux tristes” had a solemn mood. Immersed in thought, Liu played the opening notes beautifully, as they sounded like bird-song with an echoing effect.

After “Oiseaux tristes” was “Une Barque sur l’océan,” the most famous piece in Miroirs. His arms and hands moved across the entire keyboard effortlessly, playing the rolling arpeggios and the glissandos that resembled the movement of waves. Watching him play was mesmerizing because he perfectly encapsulated the duality of calmness and intensity in the ocean, a force of nature that is cyclic and dynamic.

Whereas “Une Barque sur l’océan” was remarkable for creating sounds that evoked images of the ocean’s waves, “Alborada del Gracioso” was memorable for its Spanish musical theme. The light staccato made the piece feel like a lively dance, which contrasted well with the loud, brassy notes on the upbeats. Miroirs ended with “La Vallée des cloches,” a contemplative piece with chords that sounded like the gentle striking of a bell, indicating the nonlinear passage of time.

The performance ended with Franz Liszt’s Réminiscences de Don Juan de Mozart. Like the Chopin Variations, Réminiscences is also based on Mozart’s Don Giovanni. Liu exquisitely conveyed the character’s emotions, especially the inner turmoil in the beginning of the piece. The rubato was well-executed, and the sudden contrast in dynamics from forte to piano was a pleasant surprise. Watching Liu play the ornamental passages was thrilling, as the fast sixteenth notes made the piece feel like an action-packed story. He ended the celebratory piece flawlessly, lifting his right hand off the piano high in the air. The performance ended with thunderous applause and cheers from the audience.

Before officially ending the performance, Liu played Bach’s Prelude in B Minor, arranged by Alexander Siloti. Unlike the rapid and intense music in Réminiscences, Prelude was calming and pensive. After more clapping, Liu came back to the stage to play Chopin’s Minute Waltz. His fingers were like miniature dancers, spinning in circles during the legato and making small turns for the trills. The light-hearted piece was a great way to end the concert, and the audience rose to give him a standing ovation.

From Rameau to Ravel, Liu’s performance was stunning not only for his mastery of various techniques, but also for his magnetic stage presence that enriched the concert experience. This is only the start of his soloist career, and I can’t wait to watch him perform at future concerts.

RESTAURANT REVIEW

# MINCE Japan: Delectable fusion dishes all around

A MINCE dinner with satisfying, unique Japanese-infused dishes.

★★★★★

MINCE x MISTI Japan

Japanese-fusion, free

410 Massachusetts Ave

Cambridge, MA 02139

By Alor Sahoo

If you’ve paid attention to dormspam, chances are that you’ve gotten an email from MINCE, the affordable fine dining organization on campus, to enter their coveted lottery. It is broadly agreed that MINCE pop-ups are always a phenomenal bang for their buck, and their website details all of their previous mouth-watering events. Since the MINCE Japan pop-up was sponsored by MISTI, it was a no-brainer to check it out.

As soon as I entered the Porter Room, I noticed the rejuvenating ambiance. The tables were set with tasteful florals, origami swans, chopsticks, and crystal glassware—all aligned with the advertised spring theme. Simple, but fitting. Guests had to wait a bit before the meal began, but this didn’t detract too much from the experience.

The sides were served first, and the infinite refills throughout the meal were certainly appealing. While my table and I were not necessarily the biggest fans of some of the sides (such as the takuan, the pickled radish), we obtained multiple refills of the hiyayakko and kyuri no tsukemono (silken tofu and pickled cucumber, respectively).

I found that the smooth, creamy texture of the tofu against the muted acidity of the pickles served as great palate cleansers in between courses.

Next, we were served Kanto-style ozoni soup. The warm, hearty soup was a nice contrast to the sides, with a variety of vegetables. Other parts of the soup were flower-shaped, clearly formed with a cutter. The best part, in my opinion, was the two warm, fresh mochi croutons served on the side. Most savory mochi snacks on the market are hard, crunchy snacks, so biting into a toasty, chewy bit of mochi alongside bits of soup was a unique and cool experience.

I was then served my favorite savory course, the goma tako ceviche. The pickled octopus was concentrically arranged, with translucent radish, chives, and a bit of avocado that looked suspiciously like wasabi. The chewiness of the octopus was delightful and contrasted with the surprisingly salty fried rice paper. Both the presentation and taste of this dish were the best of all the courses, in my opinion.

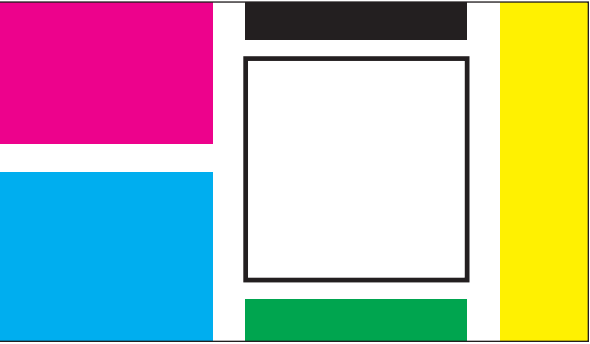
Afterwards, the staff served the chazuke with miso-cured salmon. The rice was nice and glutinous, soaked in a flavorful oil. The bits of salmon were phenomenal, though I wish the ratio of rice to non-rice was more balanced.

Finally, we were served dessert: a non-alcoholic amazake alongside a complex sakura ice cream. The pink tinge of the amazake added an extra dimension, and the drink itself was smooth, not chunky or unpleasantly starchy. The sakura ice cream was delightfully colorful, layered with kiwi, mandarin oranges, red bean paste, and so much more. The ice cream was presented much more playfully than in previous courses, providing a nice contrast.

In between each course, the MINCE chefs briefly explained what each dish consisted of, providing some insight to the diners. In the end, diners collectively thanked MINCE staff, who both curated this amazing menu and facilitated the serving process. I would highly recommend that everyone enter all of the MINCE lotteries—even when pop-ups cost money, it is typically well below market price.

Dinner!

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FACULTY SPOTLIGHT

# Achievements from the nanoscale to the Institute: Paula Hammond SB '84 PhD '93 named 52nd Killian Award recipient

Killian Award Committee: “She is someone worth emulating. Indeed, simply put, she is the best of us.”

By Karie Shen  
SCIENCE EDITOR

On April 9, 2024, Institute Professor Paula Hammond SB '84 PhD '93 presented her lecture, “Programming Medical Treatment One Nanolayer at a Time” to a crowd of students, fellow professors, and administrators alike.

The Killian Award is a tribute to James R. Killian, the tenth President of MIT, and recognizes one faculty member each year for their professional contributions, extraordinary communication to the community, and support of the Institute’s intellectual life. Hammond’s lecture, intended to be understandable to a majority of faculty and students at MIT, covered her leading work in “designing novel polymers and nanomaterials” that has garnered the attention and recognition of MIT and the wider scientific community.

Delivery of therapeutics into the human body is riddled with challenges. For example, chemotherapy is widely known to be ruthless and indiscriminating, killing healthy cells along with tumor cells. In another case, certain traumatic wounds and birth defects leave gaps in people’s bones, and current therapies may involve metal replacements and collagen sponges, which fits within the bone defect and contains growth factors to aid new bone formation. Issues, however, arise with growing children, who cannot tolerate a fixed-size metal plate. Collagen sponges provide little control of where and how quickly the growth factors are released, leading to overgrowth and a deleterious spread into the rest of the body.

Hammond’s biomaterials are thin

films — made one nanolayer at a time — that encapsulate the drug like shrink-wrap. They can further be wrapped in layers of chemicals such as antibiotics to prevent infection, siRNA to silence a tumor’s defense mechanisms, and stealth layers to prevent the nanoparticle from interacting with cells other than its target as it travels through the body. The result is something resembling a gobstopper — a spherical nanoparticle with layer upon layer of proteins and biologic drugs. This set-up not only allows for slow release of the drug as the layers gradually dissolve, but also an ordered release depending on which drugs are layered on the outside of the nanoparticle or at its core. The drug loading capacity of the nanolayers is so high that a single dose of a drug might be contained in a single layer — compared to a full collagen sponge.

In an interview with The Tech, Hammond emphasized, “There are so many things we can do when we can deploy materials at this very small, tiny scale, because we can access the parts of the body in unique ways. We can design the system so that they engage with some tissues and not others. And there’s huge possibilities there.”

Some of her more recent scientific endeavors focus on therapeutics for ovarian cancer, which, Hammond states, has had little progress in terms of treatments for the past 30 years. Research has shown that an immune protein, Interleukin-12 (IL-12), could help to control ovarian cancer by activating an anti-tumor immune response. However, when delivered directly, it could spread throughout the body, not just the tumor, and cause a

harmful autoimmune reaction. Instead, Hammond and her team encased IL-12 in the center of a nanoparticle. Instead of the hundreds of layers her team once used, their recent work reduces that dramatically to a few layers or even one layer. The nanoparticles are able to stick to tumor cells for days. In collaboration with the labs of Professors Sangeeta Bhatia and Angela Belcher, Hammond’s work on nanoparticles aims towards multi-dimensional approaches to early detection and treatment of ovarian cancer.

Yet another avenue of research involved glioblastomas, where nanoparticles are useful for penetrating the blood-brain barrier that guards the brain from many foreign substances. However, Hammond stated that there is more to nanoparticles than medicine. “We can think about agriculture, and how we might be able to design nanoparticles that help to provide more nutrients for plants. We can think about how nanoparticles might be designed for climate applications,” she shared. “We can do a huge amount with these systems.”

Hammond is no stranger to receiving accolades for her innovation. She is one of nine current Institute Professors, the highest title that can be awarded to a faculty member, and was elected into the National Academies of Medicine, Engineering, Sciences, and Inventors. However, Hammond shared that she felt especially moved by the Killian award. “It’s the award that my colleagues gave in recognition of the research on the science that I do. To me that’s incredibly meaningful, especially when I look at the list of people who received this before me.”

In fact, MIT is not just the place of Hammond’s professorship. “In the 1980’s,” Hammond playfully mumbled, to the humored delight of the crowd, she attended MIT as an undergraduate. She felt like an imposter, but eventually found community. Coming back for her Ph.D. and eventually as a faculty member, she praised the Institute for bringing people together and enabling people to do things that they would not have been able to do alone. Stepping into the role of Vice Provost of Faculty in December 2023, Hammond strives to “create an environment that is really going to give faculty an opportunity to be their best at MIT,” as they are the ones who “create our learning environment for our students” and for “an even greater, brighter MIT.”

By listening to those around us — “members of your research lab, collaborators, cohorts, the person asking the question in the crowd” — and having channels of hearing open, things always go better, Hammond states. Regarding the members of her lab who were frequently named throughout her lecture — UROPs, graduate students, and postdocs alike — Hammond states, “Without them, there would be no science.” Each of their ideas and perspectives has meaning, and “it can shine a light that we didn’t see before,” she explains. “It’s just amazing that I can have so many diverse perspectives, the undergraduates, the graduate students, the postdocs, everyone has something to bring.”

“She is someone worth emulating,” the Killian Award Selection Committee’s statement writes about Professor Hammond. “Indeed, simply put, she is the best of us.”

THREE QUESTIONS

## Dr. Ari Epstein on how the Terrascope program tackles sustainability

Meet Ari Epstein, Associate Director and Senior Lecturer in Terrascope



PHOTO COURTESY OF ARI EPSTEIN

Dr. Ari Epstein is the Associate Director and Senior Lecturer of Terrascope

By Vivian Hir & Russel Ismael  
EDITORS

Dr. Ari Epstein is the Associate Director and Senior Lecturer in the Terrascope program, a first-year learning community focused on sustainability and the environment. He teaches Solving Complex Problems (12.000) in the fall, and Terrascope Radio (SP.360) in the spring. Before joining Terrascope, Epstein was an editor for the Scientific American and a museum exhibit designer for the New England Aquarium. The Tech sat down with Epstein to learn more about the challenges he overcame as a Terrascope instructor and director and how Terrascope has influenced his students and himself.

This interview has been edited for length and clarity.

**The Tech: What is your story of joining Terrascope and creating Terrascope Radio?**

AE: It was the summer and fall of 2002, and my first year of Terrascope. 12.000 had been taught for two years. I was between jobs. I wound up on the alumni site, and there was a new thing called Terrascope. It sounded very interesting. One of the directors, Penny Chisholm, was someone I learned from during graduate school. I wrote her a note and said, “I would like to be one of the people in the program.”

They were trying to develop a spring Terrascope class and already knew what they wanted the class to accomplish, but they weren’t sure how to do it. They wanted engineering, communication, and a continuation of fall experience. One of the classes I proposed was designing museum exhibits to teach the content from the whole semester. That’s how I got hired. The spring engineering design class subject number is 1.016/2.00C. The class has gone through a lot of changes, but it is still one of our core classes.

Terrascope Radio came along a couple of years later. After my first year at Terrascope, Penny and Kip were eager to add a CI-H class to the program. One of the classes I proposed turned into Terrascope Radio, a class in which students make radio stories as part of their Terrascope experience. We worked with the Comparative Media Studies/Writing program, and at that time there was Rekha Murthy and Joellen Easton. Both were master’s students and former radio producers. We made an arrangement that for a year they would teach audio production and I would do student-driven learning. This happened in the ‘04-’05 academic year, and the class continued from there.

**TT: How have you noticed your students change after taking Terrascope Radio?**

AE: They are much better at teamwork than other students. They tend to be a lot better at project management and understanding the time things take. They also tend to have a deeper sensitivity to the lived experiences that are not theirs. We often neglect the lived experiences of people who have been dealing with this their entire lives. Our role is not to come in and be the big savior. I think that’s the important part of the Terrascope experience. Each class comes with its own set of skills.

The world becomes a much more familiar place for them. They notice sound everywhere around them. Always. They come out with a deeper sense of the stories that other people want to be told and come out recognizing that they help others’ words reach a broader audience. They want to be a medium through which the people they are creating a story about are speaking. At the end of the semester, the students tend to not say their say, but help others say theirs.

People have a richer sense of story, narrative, and what storytelling can be. People have better interviewing skills. They are themselves for interviews, and they feel much more competent, as they have done the other direction (interviewing others).

It’s very personal. There are going to be disagreements. If you are going to make something together, you need to diplomatically navigate those disagreements that are sensitive to people and keep being effective partners and friends.

I think they come out of the class with humility, but also power and control. Whoever makes the story has power, and they need to be appropriately humble about how to use that power.

Some come out becoming better writers because writing for radio requires be-

ing direct and always thinking about your listeners. When you put something in print, people can skip a paragraph. But in radio, if they aren’t interested, they can change to something else. You need to hold, grab the attention of the listener and know what the listener wants. You are not serving yourself.

**TT: How do you teach such a diverse class, who have varying ranges of exposure and interest in sustainability? What have you learned from your students in Terrascope?**

AE: Teaching the way we teach is very challenging. It requires more effort than when I used to teach lecture-based classes. At the very core, it is focused on the students and their experiences and what their state of mind is. That’s what we start with every day in class. We have the Undergraduate Teaching Fellows (UTFs), and their job is to be aware of what the students need.

I have learned a lot from my students. How do I even start? I’ve learned how to be a better teacher by letting them have better control of their learning process. To have better control of their learning process means putting themselves in the center of it. The class is largely shaped by their experience. Every year, we change the classes based on student feedback — there is constant improvement.

I learned how kind MIT students are and how wonderful they are. I have worked with a lot of students in this age range. Students here are very tolerant of differences, and they’re kind and good to one another in a way that isn’t always found elsewhere. They’re much more considerate of others’ particular needs. The students don’t really appreciate it because this is their only college experience — they don’t know what it’s like anywhere else.



GUEST COLUMN

# A statement on Jewish activism, safety, and recent events at MIT

By MIT Jews for Ceasefire

*Editor’s Note: this statement is being cross-published in the MIT Faculty Newsletter*

We, the MIT Jews for Ceasefire, a group of Jewish students, staff, and faculty, are writing to ask you, MIT students and community members, to challenge the widely reported claim that pro-Palestinian activism on campus constitutes an antisemitism problem. We urge you to avoid falling prey to bad-faith arguments by pro-Israel students and faculty who collaborate with politicians and organizations whose stated goals are the dismantling of DEI programs, the degradation of education, and the undermining of the labor movement.

Two Jewish groups have formed on campus recently: MIT Jews for Ceasefire (J4C) and the MIT Israel Alliance (MIT IA). Members of the MIT J4C took part in the November 9th protest with the MIT Coalition Against Apartheid and other anti-war groups because we believed in the right of Palestinians to live in freedom and with dignity, and so we urged MIT to divest from Israel’s occupation, apartheid, and genocidal war in Gaza. Instead of the peaceful sit-in that we were expecting (protest organizers instructed attendees to bring our homework, and so we did), we were accosted by counter-protesters who projected violent imagery on a screen, yelled, pushed us, stepped on us, insulted us, and much more. We were harassed by other Jewish and Israeli students, staff, and faculty who either could not fathom our Jewishness or were outright derisive of it. You can read what we have written about that day. One counterprotester spread a since-debunked lie that the anti-war protestors prevented MIT’s Jewish students from attending classes. This lie has grown so virulently — boosted by MIT IA’s appearance on CNN and Fox News — that it has now captured national and congressional attention as an example of the “big problem of antisemitism in academia.”

The consequences of the MIT Israel Alliance’s behavior, enabled and abetted by MIT faculty supporters, are numerous. MIT faculty and students have doxxed students expressing support for Palestine. The administration suspended the Coalition Against Apartheid, a group that had formed in the 80s to push for divestment from South African apartheid and has lobbied for similar divestment from Israel. Anti-Palestinian, anti-Arab, and Islamophobic incidents on campus have spiked. Led by the Chair of the House Republican Conference Representative Elise Stefanik, Congress has requested emails and targeted individuals for investigation. MIT police have increased both their presence and their surveillance on campus significantly. Following the protest, we learned that a number of the violent and verbally abusive counterprotesters — whose lies that day and since have put students at risk, and put MIT under national political fire — are members of the MIT Israel Alliance.

Pro-Israeli activists on campus have a cry-bullying problem: faced with opposition to their nationalism and militarism, they respond violently then turn around and claim “oppression of Jewish voices.”

A false binary

There are many accounts of attempted or outright targeting and silencing of pro-Palestinian protesters and/or Muslim-presenting people on campus. These incidents have been perpetrated by students, faculty, and the MIT administration. But the MIT Israel Alliance has successfully leveraged a moral panic around campus antisemitism, with the mainstream media irresponsibly platforming MIT IA while erasing Palestinian pain and ignoring the global anti-war movement that has a growing presence on MIT campus. At the same time, the MIT administration has, to date, largely ignored Islamophobic and anti-Jewish acts committed by pro-Israel individuals. Instead, it is focusing intently on claims of antisemitism made by pro-Israel students and faculty.

This public narrative perpetuates an imaginary binary: the Israeli nationalist Jewish students on one side versus Muslim/Arab/Palestinian students on the other. As a pro-Palestinian and anti-Zionist Jewish community, J4C challenges this false dichotomy. While MIT IA members are rewarded with invitations to hold Congressional press conferences with GOP operatives, J4C is focused on our community at MIT. With dozens of active organizers and an audience of hundreds on campus, J4C has protested, written letters,

hosted speakers, and held events. We are creating a pluralistic, progressive Jewish space on campus while challenging MIT’s complicity in the acute crisis in Gaza.

But in our quest to create a reprieve to the monopolistic hold that Israeli nationalist politics and institutions have on MIT Jewish life — for example, Hillel benefits from access to physical spaces and data, even automatically receiving Jewish student information upon matriculation without students’ consent — we have been met with bureaucratic delays and lack of any tangible support.

Whose safety?

The Israeli nationalist faction has hitched its wagon to racist and antisemitic politicians. As Jews, we are beyond alarmed that MIT IA members don’t seem to care about the harm that they are unleashing on the institution and the country by actively collaborating with Congresspeople Elise Stefanik and Mike Johnson. These politicians have both employed the highly antisemitic “Great Replacement Theory” in their arguments against immigrants and immigrant rights—a fact that, by itself, should have been immediately disqualifying. Moreover, both Representatives are two of the most ardent supporters of ex-President Trump, whose antisemitic rhetoric is louder than a bullhorn. Stefanik and Johnson refused to condemn Trump when he called the Charlottesville Unite the Right Rally Nazis “very fine people.” And they have both refused to certify President Biden’s election, displaying their outright disdain for the democratic process.

The MIT Israel Alliance and its faculty supporters are either unwitting enablers or co-conspirators in the conservative lawmakers’ transparent plot to dismantle the Diversity, Equity, and Inclusion programs (DEI). Under the guise of keeping Jewish students safe, these lawmakers are destroying the very programs and initiatives that are making campuses more safe for all people, including Jews. In the face of threatened legal action from these politicians, the MIT administration continues to suppress and punish brown and black students who have called out the Institute’s culpability in the ongoing genocide.

Likewise, in filing federal charges against our graduate workers’ national union for its endorsement of Boycott, Divestment, and Sanctions (BDS), MIT IA members have entered into a collaboration with the National Right to Work Committee, a highly litigious anti-labor organization known for “directly [contributing] to the erosion of high-paying middle-class jobs and to growing inequality.”

We urge those who engage with the MIT Israel Alliance to consider whether this group truly protects the community it claims to represent: how can MIT IA fight for all Jews while collaborating with racist and antisemitic politicians? Immigrant Jews while siding with anti-immigration politicians? Queer Jews while allying with homophobic and transphobic politicians? Poor, working-class, disabled Jews while leaning on anti-labor, anti-medicare, anti-healthcare politicians?

The MIT Israel Alliance commits real harm on campus and beyond through physical violence, intimidation, doxxing, harassment, and collaboration with dangerous individuals and organizations seeking to dismantle the very institutions that keep all of us safe. Yet MIT IA and their faculty supporters continue to broadcast that they are scared and unsafe — all because MIT community members speak up against genocide and our institution’s complicity in it. For us, Jewish safety cannot come at the expense of the safety of others. Over 32,000 Palestinians have been murdered in Gaza by Israeli forces and their US-supplied weapons. More than 13,000 of those who have been killed are children. There are no universities left in Gaza. With each passing day, as the threat of famine swells, our advocacy against the genocide becomes increasingly urgent.

Every McCarthyist movement seems dire at the moment, only to later be recognized as an embarrassment and a disgrace. We urge you to challenge the false narratives surrounding antisemitism and Jewish safety on campus, to speak out against anti-Palestinian, anti-Arab, and Islamophobic incidents at MIT, and to join us in envisioning a better university for all. We welcome all MIT students and anyone in the wider MIT community who may be questioning how to interpret or respond to events on campus, to reach out to us to start a conversation.

— MIT Jews for Ceasefire

## OPINION POLICY

**Editorials** are the official opinion of *The Tech*. They are written by the Editorial Board, which consists of Publishers Jyotsna Nair and Ellie Montemayor, Editor-in-Chief Alex Tang, Managing Editor Kate Lu, Executive Editor Vivian Hir, and Opinion Editor Srinidhi Narayanan.

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## LETTER TO THE EDITOR

# Regarding MLK Jr. Gala Action & Remarks

By Steve Cohen

*Editor’s Note: this statement is written as a response to “MLK Jr. Gala Action & Remarks” which was published on Mar. 7th by Austin Cole and the Coalition For Palestine under Issue No. 3.*

While I agree with their intent of fighting injustice in the spirit of Rev. Dr. Martin Luther King Jr., in many cases the authors’ statements, or conspicuous absence of statements, contradict what Dr. King publicly said.

The authors labeled Israel a colonizer. Dr. King said in 1968 “I see Israel as one of the great outposts of democracy in the world, and a marvelous example of what can be done, how desert land can be transformed into an oasis of brotherhood and democracy.”

The authors condemned Israel’s actions in Gaza, with no recognition that the invasion was in direct response to an attack on Israeli territory by an organized armed force.

Dr. King said “Israel’s right to exist as a state in security is uncontestable” and “...peace for Israel means security, and we must stand with all our might to protect its right to exist, its territorial integrity.”

The authors condemned Israel’s actions in Gaza without mention of the horrific atrocities against Israeli civilians, and the continued holding of hostages, many of them women and children. Additionally, they did not mention how Palestinians are mistreated by their own government, which uses them as human shields, withholds food, fuel, and medical supplies, and publicly declares that the wellbeing of their citizens is not their responsibility.

The authors themselves quoted Dr. King, “He who passively accepts evil is as much involved in it as he who helps to perpetrate it. He who accepts evil without protesting against it is really cooperating with it.” They also quote “injustice anywhere is a threat to justice everywhere”.

The authors demanded that students who violated MIT policy have their punishment rescinded because they believed the policy was unjust.

Dr. King said “One who breaks an unjust law must do so openly, lovingly, and with a willingness to accept the penalty. I submit that an individual who breaks a law that conscience tells him is unjust, and who willingly accepts the penalty of imprisonment in order to arouse the conscience of the community over its injustice, is in reality expressing the highest respect for law.”

Let’s all agree on this quote: “[Non-violence] does not seek to defeat or humiliate the opponent, but to win his friendship and understanding...The end is redemption and reconciliation.”

The purpose of this letter is not to defeat or humiliate the authors of the piece.

It is to help them and their supporters recognize that the situation and history are complex, that both sides have legitimate grievances and shameful behaviors, that actions have consequences, and that calls to fight injustice should support everyone, not just those you agree with. Only when this recognition occurs, on both sides, can we start discussions about how to resolve the issues.

Steve Cohen ‘88

## CORRECTIONS

**“MIT’s Department of Civil and Environmental Engineering Marks Mini-UROP Program’s Tenth Year”:**

The original version of this article was incorrectly titled “MIT’s Department of Civil and Environmental Engineering Marks its Tenth Anniversary.”

This has been corrected to reflect that the department’s mini-UROP program, not the department itself, is marking the occasion; and that the headline refers to the program celebrating its tenth year of operation, not its tenth anniversary.

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SCIENCE NEWS

# NASA’s budget cuts for the Chandra X-ray Observatory could leave a gaping hole in the field

Canizares: “The community needs Chandra.”

By Karie Shen & Alex Tang  
EDITORS

From the Greeks to Galileo, from the Babylonians to Brahe, the pursuit to understand the cosmos is as old as civilization itself. We went to the Moon, landed rovers on Mars, and did more than just stare at the night sky because we sought discovery. In exploring what’s up there, we were able to understand, launch by launch, photograph by photograph, a bit of how we came to exist.

The Chandra X-ray Observatory, launched in 1999, contributes a unique perspective with X-ray imaging capabilities. Chandra has shaped our understanding of deep space over the decades; it can distinguish whether the center of a galaxy holds one or two separate black holes, image the remains of exploding massive stars, and provide direct proof of dark matter, all with astounding clarity. After 24 years, however, Chandra is in danger. NASA’s recently released budget plan for the next 5 years drastically erodes funding for Chandra to nearly nothing. In other words, NASA plans to terminate the program—and hundreds of scientists around the world are furious.

Chandra can see what we can’t see. It analyzes light in the X-ray region, which is invisible to the naked eye. Chandra has revolutionized understanding of the X-ray universe, having a far higher resolution than any other X-ray telescope ever built. David Huenemoerder, a research scientist at MIT Kavli Institute for Astrophysics and Space Research (MKI) since 1992, compares the resolution of other telescopes to “taking your glasses off. Instead of seeing 10 things, you see one big blob.”

Catherine Grant, a research scientist who has been at the MKI since 1999, states that Chandra’s images “are both beautiful and help us understand how elements important to life are created and spread throughout the universe.”

Chandra’s data is used worldwide today but has had intimate ties with MIT since its inception. Two of its four instruments were developed at MIT. A group led by Claude Canizares, former director of what is now MKI\*, built the High Energy Transmission Grating Spectrometer, which precisely determines energies of the X-rays reflected from the telescope’s mirrors. The Advanced CCD Imaging Spectrometer, which aids in imaging X-rays, was built with the bulk of testing and calibrating being done on the MIT campus, according to Grant,

who has been on the ACIS team since 1999. The CCDs (charge coupled devices), which are the photon detectors on the telescope, came directly from MIT Lincoln Labs.

\*The MIT Kavli Center was previously the Center for Space Research

“Spectroscopy puts the ‘physics’ in astrophysics,” Huenemoerder said. “If you look at people who are using Chandra to do spectroscopy, a great fraction of them came through here at MIT. That shows you the heritage and the role that MIT has had in this field.”

Professor Robert Simcoe, current director of the MKI who does not work on the Chandra mission, states, “X-ray astronomy has been linked with MIT for 60 years—one could argue the field was invented here. Chandra in particular has been a flagship for over half this era, sustaining a vibrant research environment with multiple generations of students, post-docs, research scientists and faculty.” The proposed funding cut would promise an abrupt end to Chandra’s profound impact on astrophysics—both the research and the scientific community built around it. In 2023, NASA’s budget for Chandra was \$68.3 million. Last year, a similar amount was requested for 2024, and the budget was projected to increase. However, the latest requests from this year’s estimates for funding dwindle from \$41.1 million in 2025 to \$5.2 million in 2029.

Canizares shares, “I was taken by surprise by the sudden budget cut, especially after NASA’s own ‘2022 Senior Review.’” NASA’s senior review is conducted every three years, its goal being to assess the scientific return of missions to advise future projects within a constrained budget. In the review, Chandra received the highest ranking, Tier 1, along with Hubble. Hans Moritz Guenther, research scientist at MKI responsible for MARX, a program that is used to simulate what Chandra would see, shares the same sentiment. “I know that Chandra won’t work forever, but I never even considered NASA to propose to end a mission that has the highest marks without even conducting another senior review.”

NASA’s reasoning for the funding cut states, “The Chandra spacecraft has been degrading over its mission lifetime to the extent that several systems require active management to keep temperatures within acceptable ranges for spacecraft operations. This makes scheduling and the post processing of data more complex, increasing mission management costs beyond what NASA can currently afford.”

The trend of budget cuts from NASA are no surprise. In recent years, Congress has gradually reduced funding for NASA: in 2024, NASA will receive 24.875 billion dollars, 2% less than what it received last year and 8.5% less than 27.185 billion dollars requested. This leaves them with the difficult choice of either funding new missions or supporting existing ones.

Researchers on Chandra, however, firmly disagree with the report about the extent of Chandra’s degradation. Canizares states, “Frankly, NASA’s explanation has outright errors, which we’ve been quick to point out.” The issue of thermal control comes from something—what, exactly, is not known—building up on the detectors, which have to be kept cold to function properly. Operations are slightly more difficult due to the concern of the electronics overheating. “[Chandra] used to be able to stare at one place for a day or more. Now you can’t do that,” Huenemoerder states. To circumvent this problem, Huenemoerder said, “You can point at this object for half a day, go somewhere else, then come back, and keep collecting data.”

While operating the telescope is undoubtedly more complicated than at its inception, the observational efficiency remains “nearly as high as it was at the start, due to clever work by the mission planning and engineering teams,” Grant claims. Chandra’s mission management even disagrees that these thermal controls have a financial impact.

In contrast, the cost of losing Chandra may be devastating, for the people and the field as a whole. “At any one time in Chandra’s history,” states Guenther, “there were several faculty members and at least a dozen research scientists working on or with Chandra at MIT.” Across the Greater Boston area, almost 200 people are employed to run Chandra, process data, produce images, and share information with the scientific community and the general public. “There are insufficient jobs in other projects to absorb all these newly unemployed people—many of them would leave the field entirely which would be a regrettable loss of expertise,” Grant explains. Current PhD students just entering graduate school with hopes of conducting research with Chandra are also at risk.

From a scientific lens, a major factor contributing to the impact of losing Chandra is that the spatial resolution it provides will not be available again for decades. There are no existing telescopes that come close to Chandra’s

capabilities, and there are no plans to build a successor that can replace it for two decades, leaving a gaping hole in the X-ray field.

Two other Great Observatories that were launched in the same period as Chandra, the Spitzer Space Telescope and the Compton Gamma Ray Observatory, have already been shut down, but have had successors. Spitzer could no longer point its antenna to Earth and receive light on its solar panels at the same time, and was superseded by the James Webb Space Telescope a year later. Similarly, Compton’s gyroscope failed and had successors, namely, the Swift and Fermi Gamma Ray satellites. With no successor or obvious deficiencies, accepting the decommissioning of Chandra is a tall demand. Simcoe highlighted the potential for the curtailing of the Chandra project to impact America’s leading role in exploring the frontiers of space with X-rays: “Many compelling X-ray experiments in recent years are now being spearheaded and launched from outside the US. If this trend continues, the US will be at risk of losing our historical leadership position in this field.”

Scientists are adamant about keeping Chandra in commission. According to Canizares, “more than 700 astronomers (world-wide) signed a letter requesting that NASA reconsider the decision.” In March 2024, the coalition #SaveChandra.org was organized by community astronomers.

Meanwhile, given that the budget cannot be augmented anymore this year, MKI is assessing how the Chandra team can continue to operate under the reduced budget—including whether the observatory “can continue to operate if the most extreme versions of the prospective budget cuts are implemented,” according to Simcoe. To this day, “Chandra continues to make new, unanticipated discoveries. When Chandra was launched, we did not know about exoplanets, could not detect gravitational waves, and could not peer into the stellar nurseries in the far infrared,” Guenther stated.. “A versatile, general-purpose observatory like Chandra, that complements other instruments with capabilities that no other X-ray telescope can match, will continue to make important discoveries.”

The sentiment for retracting future budget cuts remains clear. Grant shares, “the astronomical community certainly hasn’t run out of ideas for using [Chandra].”

“The community needs Chandra,” Canizares asserts.



OMAR OROZCO - THE TECH

A dancer performing folclórico during Sin LiMiTe’s Gala Sabrosura.



OMAR OROZCO - THE TECH

Students partying at SHPE’s annual Gala Gigante in Morss Hall.



ALEXA SIMAO - THE TECH

Blossoms on a tree outside building 66 promise spring weather on Wednesday, April 3.



OMAR OROZCO - THE TECH

The April 2024 solar eclipse, as seen from Field C during the Society of Physics Students eclipse watch party, April 8, 2024.

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