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WEATHER
THU: 74°F | 56°F
Partial clouds.
FRI: 64°F | 60°F
Rainy.
SAT: 82°F | 87°F
Partial clouds.

Volume 140, Number 25-28

Thursday, August 27, 2020

Undergraduates returning for fall term to partake in Q-Week

Students must test for COVID-19 prior to check-in, take second test within five to seven days of first negative test

By Shelley Choi
ASSOCIATE NEWS EDITOR

Undergraduate students living on campus during the fall term will participate in a mandatory Quarantine Week (Q-Week) Aug. 29–Sept. 7, Chancellor Cindy Barnhart PhD '88, Vice Chancellor Ian Waitz, and Vice President and Dean for Student Life Suzy Nelson announced in an email to students Aug. 19.

During Q-Week, students "cannot have direct contact with anyone else, including prospective podmates," and may only leave their rooms to "use their assigned bathroom," "get packages or meals," or exercise outdoors, Barnhart, Waitz, and Nelson wrote. They added that they "strongly recommend limiting outdoor exercise to an hour each day."

Students should "minimize all non-essential activities and stay on MIT's campus," maintain at least six feet of physical distance, and wear a face covering in public spaces.

Students must also take a COVID-19 test at MIT Medical and complete a Massachusetts Travel Form before checking into their residence halls Aug. 29–30. After five to seven days, students must take a second test and have both test results come back negative to "leave self-quarantine." The first week of classes from Sept. 1–7 will be conducted remotely.

During Q-Week, students can "apply to form a pod with up to five other students" living in the same residence hall. Within each ap-

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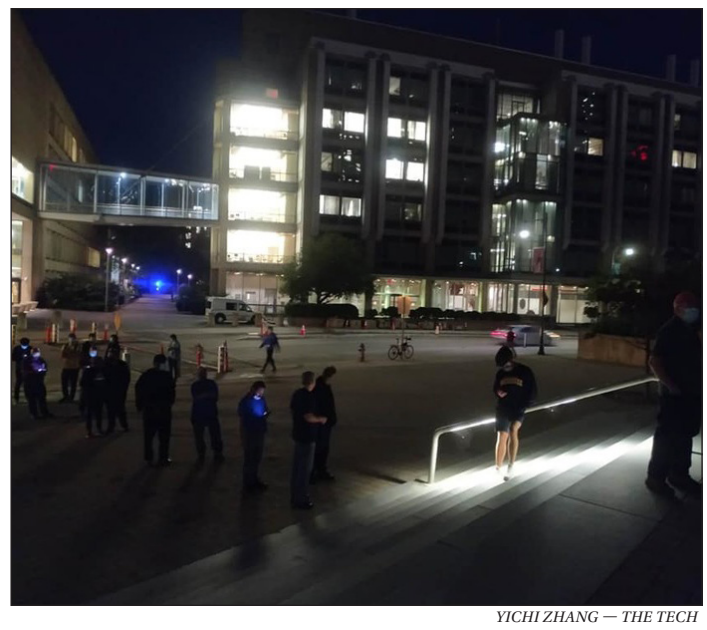
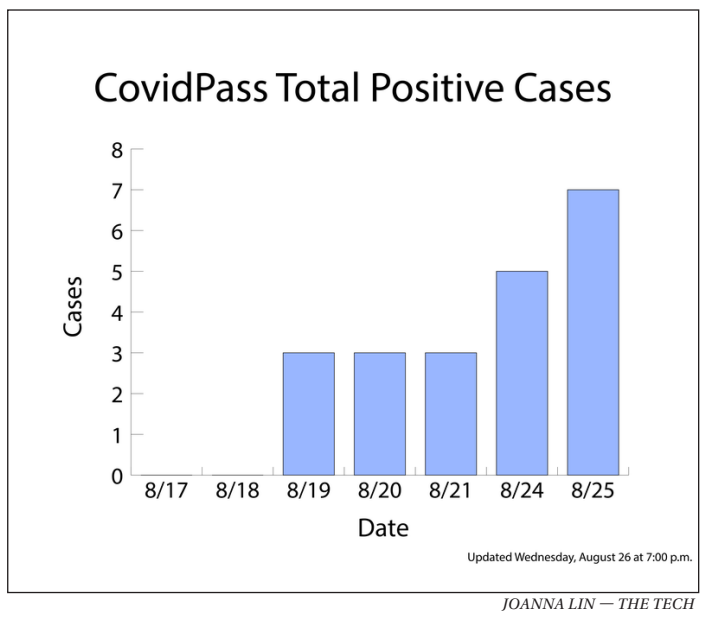


YICHI ZHANG — THE TECH

The line for COVID-19 testing at MIT Medical stretches across Ames Street early in the morning.



JOANNA LIN — THE TECH

Daily cumulative positive COVID-19 tests administered by MIT Medical through the CovidPass program.

First week of campus-wide testing plagued by long lines at Medical

MIT Medical extends hours to combat long wait times

By Whitney Zhang
EDITOR

Some members of the MIT community spent over two hours waiting in line to receive COVID-19 tests at MIT Medical Aug. 18 after being notified on their COVID Pass app that they would need to be tested within 24 hours or have their access to campus revoked. Wait times of over an hour have continued through the past week as MIT scales testing to all COVID Pass users. As of press time, MIT Medical has reported seven positive test results on its website.

MIT community members who live in an MIT residence hall or are on campus more than three days a week are tested twice weekly. Nonresidents on campus one to three days per week are tested weekly, and all other visitors need a test within seven days prior to accessing campus, according to the MIT COVID Apps website. COVID Pass notifies MIT community members when they need to be tested, displays their testing results, and allows them to complete mandatory daily health attestations. There are approximately 8,000 COVID Pass users, although over half of them are currently not accessing campus.

MIT began scaling up testing Aug. 13, such that all COVID Pass users currently on campus would be tested by Aug. 20. A record total of 957 and 1,930 tests were performed Aug. 17 and Aug. 18, respectively, according to emails from MIT Medical Director Cecilia Stuopis '90 and Vice Chancellor Ian Waitz forwarded to *The Tech*.

Lines snaked from MIT Medical to the East Campus courtyard Aug. 17 and to the Kendall/MIT T stop Aug. 18. Tee Udomlumleart '21 said in an interview with The Tech that he

COVID-19 Testing, Page 15

MIT Corporation elects Diane B. Greene as new Chair for organization

Technologist, entrepreneur, sailor to succeed Chairman Millard, assume position Oct. 2

By Disha Trivedi

Diane B. Greene SM '78 has been elected as Chair of the MIT Corporation and will assume leadership Oct. 2.

Greene is the first woman elected to chair the MIT Corporation, an organization of 78 members from academia and industry who serve as MIT's board of trustees. She succeeds Robert B. Millard '73, who has served as Chairman since 2014. She studied naval architecture at MIT and later pivoted to a career in the tech industry, where her experience includes serving as CEO of Google Cloud and as co-founder of VMware and Bebop Technologies.

In an interview with *The Tech,* Greene discussed her experience as it informs her approach to supporting MIT's response to global change. "It's a privilege to be around the people [at MIT]. One of the things I've always loved in building companies is the culture. And so having this opportunity, with the Corporation, to enhance and maintain MIT's culture is important — it's already

Corporation Chair, Page 2

IN SHORT

Seniors may register for **first quarter PE classes** starting 8 a.m. Thursday. All other undergraduates may register for first quarter PE classes starting 8 a.m. Friday.

Move-in dates for undergraduate students returning to campus are Aug. 29–30.

Undergraduate students living on campus during the fall must participate in **Quarantine Week** Aug. 29–Sept. 7.

Registration day is Aug. 31.

The **first day of classes** is Sept. 1.

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

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Nergis Mavalvala to be MIT's Dean of Science

Mavalvala will be first woman, LGBTQ+ individual to hold Dean of Science position

By Jennifer Ai

Professor of Astrophysics and Associate Head of the Department of Physics Nergis Mavalvala PhD '97 will become Dean of MIT's School of Science Sept. 1.

Mavalvala is the first woman to serve as the Dean of Science. She was recognized as LGBTQ+ scientist of the year by the National Organization of Gay and Lesbian Scientists and Technical Professionals in 2014. Mavalvala discussed her personal and professional experiences, as well as her hopes for her new role, in an interview with *The Tech.*

Mavalvala shared her three main priorities for the School of Science: to push forward MIT's scientific research and interdisciplinary collaboration, promote diversity and inclusion in science, and improve career development pathways for the school's staff.

"The single most important thing I've been entrusted to do and I wish to do is to maintain the high quality of scientific research and education" at MIT, Mavalvala said, noting the importance of "always hav[ing] our eyes open for new opportunities and directions to go in science."

In particular, she is interested in promoting cross-disciplinary research and opportunities and

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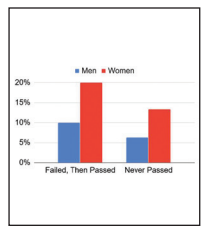
THE FUGITIVE
The critically acclaimed 1993 action thriller still makes your heart race.
ARTS, p. 7

TROYE SIVAN
An EP of dreamy bops for quarantine.
ARTS, p. 7



GENDER BIAS
MechE qualifying exam results reveal departmental diversity issues.
OPINION, p. 6

DILAPIDATED DOTING
A barn is a barn; the truth is the truth.
CAMPUS LIFE, p. 3

SECTIONS

Greene shares views on pandemic, climate change, diversity and inclusion

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a great culture — and the COVID crisis is making us all appreciate it," she said.

On her first exploration of MIT's campus, Greene found herself in Strobe Alley in front of the famous high-speed bullet-through-apple and milk drop photographs. A man saw her admiring the photographs, "and asked me if I was interested in them. I said, 'Oh yeah, they're super interesting.'"

In response, the man gestured to his lab. "Well, come on in!"

That man was Harold "Doc" Edgerton '31, MIT professor of electrical engineering and inventor of high-speed stroboscopic photography. Greene toured his lab and peppered him with questions. "It was like I'd gone through some kind of magic door where there were these people who were super inventive and smart and engaged. I still feel that way about MIT. It's just this amazing group of people."

Responding to the pandemic

Due to the COVID-19 pandemic, many students, faculty, and staff will be learning and working remotely when classes start in September.

"A big part of the MIT experience is on campus with professors and your fellow students and in the labs," Greene said. "Clearly, it's a huge loss for the students to not be able to be together and in labs and with faculty. The first step is to just acknowledge that we have to make the best of a less than perfect situation."

To adapt the Institute to the pandemic, Greene emphasized that the Corporation will focus on "supporting the unbelievably hard work going on among the administration and faculty to offer everything remotely."

As director emerita of Khan Academy, Greene has experience with online education. Soon after learning of her election as Chair, she visited MIT Information Systems and Technology's website to investigate tools for students to collaborate remotely.

"There are so many different ways to communicate, except that you can't all be in a room together. So what's going to be the substitute?" Greene asked. She added, "I think it's going to be an interesting year in terms of developing alternative suites that can approximate the wonderfulness of all being together."

Though "it's easy to become despondent at times" during the pandemic, Greene advises students to "remember what excites you... and whenever possible, get out to nature."

An experienced sailor, Greene enjoys holding meetings outdoors. "I learned long ago to do off-sites with my team on the water because they see me as very happy there. And I like to do a lot of fun team building things, like scavenger hunts."

Smiling, she added, "I'm not sure I'll be doing that with the Corporation."

Climate change

Greene emphasized the role of resource sustainability and innovation in addressing climate change.

"Back when MIT was founded in 1861, resources were considered to be limitless... now we have all this technology and a much more expansive understanding of science and we want to use that to solve today's problems," she said.

"When we make new discoveries, when we design a new material, when we produce a new algorithm," we should consider "the implications and the sustainability and what it means for human dignity, to incorporate that in as we do it," Greene said.

Following the 2014 Campus Conversation on Climate Change and resulting committee report, President L. Rafael Reif and four senior administrators released A Plan for Action on Climate Change in 2015. Among other steps, the plan outlined decisions to expand climate research, reduce campus greenhouse gas emissions, and not divest from fossil fuels. In July, President Reif announced the Climate Grand Challenges research effort, through which the Institute will fund new multi-disciplinary MIT research on climate change mitigation.

Greene highlighted the importance of the Corporation supporting MIT administration and faculty in their climate aims. "Any discussion I have with a member of the board of trustees mentions climate change, and, you know, we've really got to make sure MIT can work on it, in all the ways they need to."

Diversity and inclusion

Greene values the role of leaders in providing representation and shifting cultures, in ways large and small.

"I think the last year has really heightened everyone's awareness around the importance of culture and inclusivity," said Greene. "The Corporation bringing in a female Chair is a first and is in sync with everybody's awareness." In fact, her election precipitated the changing of the title for the head of the MIT Corporation from "Chairman" to "Chair."

Greene advised that women in science and technology keep "being bold" in their pursuits. "Part of leadership is really caring about what you're doing and being able to articulate that and share it," she said.

Regarding leadership in science and technology, Greene stressed the importance of long-term thinking. "You have to be inclusive about the possibilities — the entire spectrum of possibilities," she said. "A lot of [technologies] have long-term consequences, not just short-term."

When she assumes the role of Chair in October, Greene plans to call each member of the Corporation and listen to their ideas. "Part of my job is to make sure it's easy" for members of the Corporation to "contribute their immense value," she said.

Maintaining avenues for organization members to approach her with ideas is one of Greene's tenets. "I always keep a very open door," Greene said.

Mavalvala hopes to encourage inclusivity, 'culture of welcome for everyone'

Dean of Science, from Page 1

bringing together people from different fields. "Every department in the school is fantastic," she said, explaining that encouraging these intersections can allow them to "build something new and dramatic that each of them alone couldn't do."

Mavalvala also hopes to encourage the School of Science to "start paying attention to the other parts of ourselves, as scientists." She emphasized the importance of answering questions of "Who does science? Who has access to doing science? Who's kept out of it?" to encourage inclusivity and "create a culture of welcome for everyone."

She said, "We want the very best talent in science and that talent comes in every shape and color and orientation. Therefore, we should be striving to make science something that everybody has the opportunity to do if they would like to."

Finally, Mavalvala intends to focus more on career development opportunities for the school's staff, "who make everything possible." Unlike students and professors, she said, who generally have a relatively direct path to follow, the staff don't always have a clear career trajectory. Mavalvala emphasized the importance of "think[ing] about everyone at MIT" and helping students, faculty, and staff "get to where they want to go."

Mavalvala said that the challenge of funding science has been at the forefront of her and her predecessor Michael Sipser's agendas. Two aspects of funding need consideration: the funding of scientific research and institutions, and funding for individual students.

First, "the funding of scientific research has already been shifting in this country and worldwide" in relation to the amount of federal or private funding provided, where it comes from, and what it goes toward.

Second, Mavalvala said that "as the funding model evolves, the way that we pay for things at MIT will have to evolve." In particular, because graduate students are often funded through the grant of one particular faculty member, this creates a "very exclusive relationship" between student and professor. While this relationship can be "strong and supportive," Mavalvala has concerns about the faculty member's ability to control the student's "career, funding, etc." should the relationship become strained, and is thinking about alternatives to the current funding model.

Mavalvala acknowledged the uncertainty regarding the "post-COVID world," but said that "we at MIT should be not just responding to these shifts" but proactively "creating the world we want to see."

"I've always had a sort of sense of responsibility to do more than just what's needed to forward my own agenda," Mavalvala said, adding that there "are many issues here at MIT and outside of MIT too that really need tackling and I feel like if these things bother us then we should stop complaining and do something about it." She said that she is driven to continue addressing these problems because she "really loves" the people she works with. "Every problem is worth solving if you're solving it with the people you like working with."

Mavalvala advises the "many, many students" she has met "who worry that they don't belong at MIT or it was just pure luck," to remember "that you do belong, you do have the talent, the road is not always smooth, but it's a journey worth walking."

She also advises students to find their mentors. "There are people who are rooting for you and all you have to do is make the connection," she said. When asking for advice, "the very worst that could happen is the person would say 'no.' And almost no one ever does that. I think all of us who have come through the system being carried by the generation before us appreciate that this was part of our journey and we want to give back, and so students should find their mentors, find their champions, and really engage with them."

Mavalvala remains optimistic about the future of the School of Science and MIT in general. "MIT has changed a lot in the time that I've known it, most of those changes very much for the better," she said. "It's more diverse in terms of interests, in terms of gender, in terms of race, and... I think if we continue this trajectory it's going to continue to be a better and better place."

WENBO'S WALKS

Dilapidated doting

How much have I truly changed?

By Wenbo Wu
EDITOR

There's always a level of uncertainty in these articles. For example, with the new semester dawning upon us, should I break from the trend of cross-referencing previous entries published prior to this one?

After much consideration, I figured that I should. Given that a good portion of possible readers have not read any of the previous articles in this column, I should probably turn a new page. Or something. That was *definitely* not a reference to a previous article.

Oh, there's another reason I want a "reset button" of sorts after each semester, I suppose. Hypothetically, taken to the extreme, I can envision a potential article in which almost every word is hyperlinked in the web version.

These *are* my thoughts I'm pouring out onto this page, after all, and in theory if this goes on indefinitely I will eventually drain my basis set of observations and inevitably everything I say will become tangentially related to everything else.

Such an article would not only be a pain to read and aesthetically unappealing, but it would also bring me, the person adding in all these links, immense dissatisfaction. You and I are both (presumably) here to have a good time, so let's not do that.

I mean, hopefully, I'll have more than three years' worth of original thoughts left before I graduate. I was only speaking in hypotheticals.

However, despite the fact that changes like these are inevitable, I suppose some things never change in the long run. For example, consider the publication of these articles. Guess what? To the (possible) joy of the avid Campus Life supporter, *Wenbo's Walks* will return to a biweekly schedule after our brief excursion into monthly editions over the summer.

You may be wondering at this point: "Are there other things that won't change, Wenbo?" After all, I set up this entire premise of perpetuity, and now you're expecting more details, as if I'd just written a thesis statement or something. Whelp. To be quite honest, I had a few things on my mind, but I appear to have forgotten them.

But I will tell you what is on my mind: a quote from the late Ken Kesey from his novel *One Flew Over the Cuckoo's Nest*: "But it's the truth, even if it didn't happen." Reminds me of hypotheticals, I guess.

Oh wait, I remember now! Another thing about my column is poor transitions!

Anyways, Pennsylvania: a strange detail to appear on the Taylor Swift song "seven," an even stranger place to whimsically drive up to from Virginia amid a global pandemic. As always, I should preface this by saying that I do, in fact, like a responsible citizen of the world, social distance and wear a face covering.

> **Of course, up keeping a barn is a large task to ask of one person, so I'll have someone to help me along the way.**

But this walk in the fields of the Keystone State is something I would've never been able to anticipate. It's almost cathartic. I'm seeing things I hadn't seen in years since I left the great state of Texas.

There's an old barn in the distance, planted before a crumbling skyline of trees. The planks tacked onto its sides can scarcely mask its decaying infrastructure. The red paint is largely gone, and the shingles of the roof have already caved in, rainwater mirages resting in the pools of a metallic desert.

> **Oh wait, I remember now! Another thing about my column is poor transitions!**

As I walk by, I can't help but feel injury on behalf of the barn. Why did people abandon it? It certainly lacks none in valor or, surely, former grandeur. It had the capacity (literally) to be great, so the fault must lie upon those responsible for its upkeep.

But is this barn more a consequence of time? It's a common saying that time heals all wounds, but what if some of them scar? Is that truly any better than just being a "cool" story to tell at parties?

I wish I could afford to buy the barn off whoever owns it, because if nothing else, I would attempt to do the current eyesore some justice. Maybe restore it to its former glory, eventually raising some hens or something. I'd hesitate on livestock only because they contribute to global warming.

But alas, I cannot afford the purchase, and perhaps I should work first to ensure my own barn doesn't befall the same fate. Of course, it's a large task to ask of one person, so I'll have someone to help me along the way. And then afterwards, I'll do what I can to save this barn. Perhaps.

Aaaand now I've dug myself into this hole of absurdist sentiment. How does Wenbo transition out of it into a less serious voice again? Oh, that's right — he doesn't.

Did someone say nonsensical metaphors and generic weirdness? No? Well, I don't care, I thought of it and thus I shall address it preemptively just in case. Those are traits of my column too, I guess. This particular article has really been more of a self-discovery into what this column is at heart, hasn't it?

I often wonder how much I've changed since leaving Texas. I think there's a notion that many individuals tend to be like homing pigeons or sparrows, that no matter how far they travel from their birthplace, the apple ultimately never falls far from the branches of the forgiving tree.

I don't know if I feel the same way about Texas. I have an undying love for the state somewhere in my heart that shows itself in peculiar ways through the yeehaws of country music. But at the same time, the state has numerous issues and frequently does things that make me question my adoration for it. Often, the only thing that attaches me to it is that I was born there. But should that truly muddle my judgement of the state?

I also wonder, similarly, how much I've changed since starting this column. I mean, in the first article, I was still commenting on the price of eggs at H Mart compared to Target, but look at me now. I've grown from ranting about a single egg to musing over the entire barn.

Look, do any of these barns, whether it be the Pennsylvania one or my own, really exist? I'll defer to Kesey on that one. But is it any less of a truth? I'll pose that as a question to my readers as I sit here having moved into my new place in Boston. I'll see you again in two weeks.

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GUEST COLUMN

MIT’s impact will be determined by its humanistic pursuits

The work of students must be grounded in values that examine history critically

By Kelvin Green II

This article was published online on August 12, 2020.

The Massachusetts Institute of Technology (MIT) has the potential to play a leading role in the cause for humanity. The opportunity to demonstrate or abdicate leadership in this role presents itself each time MIT responds or neglects the challenges facing citizens across the nation and the globe. At MIT, we often speak of our ability to make a better MIT and thus a better world. The beauty within this quest we share as a community lies in our power to wield our authority; and we most directly influence humanity through the young community of citizens we teach — our students.

> **The Institute is more than an opportunity for students to pursue an area of intellectual inquiry with vigor and successful determination.**

The Institute is more than an opportunity for students, graduate or undergraduate, to pursue an area of intellectual inquiry with vigor and successful determination. Whether students are working toward one major or two or three; whether spending time in a research lab or a student group; whether living on-campus in dormitories or fraternity and sorority abodes, or off-campus in similar establishments, apartments, and living groups; MIT’s responsibility, *our* responsibility, extends beyond what choices are made available to students during their time here — MIT’s responsibility is first in what precedes the student choice. Although seldom at the forefront of every student’s mind while we juggle the many aspects of what it means to attend a rigorously demanding place of learning, students gain knowledge of what it means for MIT to be a piece of our identity by the values taught and those values not taught both inside and outside of the traditional classroom.

Values are revealed in our practice, they are most clearly shown in our actions. Values of hard work, collaboration, intellectual exploration, and community are highly impressed on students at the Institute. Values of diversity, equity, and inclusion are beginning to take a more central place in the MIT community and are in the process of becoming integrated in the ways we think about belonging for years to come. However, the value of history — its clarifying and action-inducing information — has yet to sustainably dwell at the Institute in ways that can only positively influence our pedagogies and administrative decision-making, that can only impress upon students who walk the Infinite the importance of knowing, as the artist James Baldwin states, “History is not the past, it is the present. We carry our history with us. We are our history.” MIT has demonstrated partial understanding of Baldwin’s words. Yet, the whole must be engaged.

The information unearthed from the MIT&Slavery course is only activated and empowered when we engage with it in serious ways that demand reassessment of existing practices in our offices, departments, labs, and centers. What does it mean that MIT’s founder, William Barton Rogers, was an enslaver of human beings? What does it mean for our institution to occupy lands first inhabited by people with respect for land’s sovereignty? Our history informs our values, and if we fail to reckon with our history then we cannot accept its demands for change on our present.

> **What does it mean for our institution to occupy lands first inhabited by people with respect for land’s sovereignty?**

All American institutions suffer in both small and grandiose ways from failing to reckon with their history. This is little surprise since America itself continually struggles with this divine challenge, threatening its own citizens ability to be humane and function uprightly as citizens of the world. MIT has the potential to be humanist, and thereby produce humanists of grand impact for she is internationally-known, respected, and expected to produce citizenry equipped to significantly aid and innovate in the global fields where humanist values are proven time and again absent or in constant battle of erasure: the economic market, scientific exploration, government, and (inter)national crisis management.

> **Will we teach our students they should espouse humanist values as central and not peripheral to their thinking?**

What does it mean to be an MIT student? It means as much as MIT administration, staff, faculty, and students are willing to allow or demand it to mean. Will we teach our students they should espouse humanist values as central and not peripheral to their thinking? Will we allow pursuit of technological advancement to not precede but follow the humane considerations that technology implicates? MIT’s impact on the world of today, which is in large part its graduates, depends on the attempt to address or the decision to avoid these questions. At Princeton University’s “How Values Can be Taught in the University”, humanities professor Toni Morrison leaves her audience with these final words, of which I want to leave you with: “If the university does not seriously and rigorously take its role as guardian of wider civic freedoms, as interrogator of more and more complex ethical problems, as servant and preservor of deeper democratic practices, then some other regime or ménage of regimes will do it for us, in spite of us, and without us.”

Kelvin Green II is an undergraduate student in the Department of Physics. He is a member of Chocolate City, an assistant Officer on Diversity in the Undergraduate Association, and a member of Alpha Phi Alpha Fraternity, Inc. Rho Nu Chapter.

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GUEST COLUMN

MIT Democrats endorses Ed Markey for the United States Senate

The incumbent senator from Massachusetts is a proven champion of progressive change

By MIT Democrats

This article was published online on August 16, 2020.

With the ongoing COVID-19 pandemic, protests around racial justice, and the presidential election all dominating headlines, the Massachusetts Democratic primary for U.S. Senate has flown under many people's radars. However, voting for the right Senate candidate in this race could not be more important. The Senate is crucial to passing legislation that addresses the many crises facing our nation, ranging from climate change to income inequality. It is also a chamber structurally biased against progressives and one in need of strong liberal voices to drive the debate around the solutions our country needs. With his strong voting record, his years of dedicated service, and his active role in spearheading progressive policy, Ed Markey is the voice Massachusetts needs, and MIT Democrats proudly endorses his candidacy for U.S. Senate.

Ed Markey grew up in a working-class family in Malden. He understands what it is like to be crushed by student loan debt — to pay for college, he worked as an ice cream truck driver. After graduating from Boston College, Ed Markey attended Boston College Law School. He was first elected to Congress in 1976 and served in the House of Representatives until 2013 when he was elected to the Senate. Throughout his tenure in Congress, he has been a pioneer in producing progressive legislation.

Ed Markey is a national leader in the fight against the climate crisis.

Ed Markey is a national leader in the fight against the climate crisis. Together with Representative Alexandria Ocasio-Cortez, he co-authored the Green New Deal, a landmark proposal that has brought the issue of climate change to the forefront of the Democratic party's platform. It calls for a transition to 100% clean energy over the course of the next ten years while creating millions of new jobs. Long before this, Ed Markey established his strong track record of environmental policy achievements, including setting efficiency standards for household appliances (1987), fuel economy standards for vehicles (2007), and a cap and trade system for curbing greenhouse gas emissions (Waxman-Markey Bill, 2009).

During the current crises of the COVID-19 pandemic and police brutality, Ed Markey has been a strong advocate for economic and racial justice. Last month, he co-sponsored the RISE Act, a bipartisan bill that would provide $26 billion in relief funding for scientific research. He also recently introduced legislation to end qualified immunity for law enforcement officers, which would enable them to be held accountable in court for use of excessive force or brutality.

The nature of the two-senators-per-state representation in the Senate (as opposed to population-based representation in the House) is inherently biased against progressive voices. While many Democratic Senate candidates have to moderate their policy stances to win statewide in purple or red states, in Massachusetts we have the opportunity, as a solid-blue state, to send an unabashedly liberal voice to the Senate. Ed Markey has been this voice throughout his career. His introduction of the Green New Deal serves as a prime example of how progressive policy has driven mainstream Democratic policies (like Joe Biden's climate plan) to become increasingly ambitious in order to meet this important moment. While Joe Kennedy has served as a suitable representative for Massachusetts' 4th congressional district, this primary represents our one chance to send a genuine progressive to the Senate to truly drive the much-needed debates and champion progressive causes. With his solid voting record, history of service to the people of Massachusetts, and real leadership on the most important issues of the day, Ed Markey is undoubtedly the best choice for our senator.

Markey is undoubtedly the best choice for our senator.

For non-partisan information on how to register for and vote in the Massachusetts primary, check out MITvote's website here.

Our endorsement process: MIT Democrats hosted a discussion event about the Massachusetts Senate primary. Afterwards, we held a vote among our membership, and Ed Markey won by a landslide.

The following members of MIT Democrats assisted in writing this endorsement:

Seamus Lombardo, Graduate Student in Aerospace Engineering, Vice President of MIT Democrats

Carina Belvin, Graduate Student in Physics, Member of MIT Democrats

GUEST COLUMN

Every department deserves diversity

G4HMIT, BGSA, and GSC DEI call for the hiring of centrally-coordinated departmental diversity officers with an explicit timeline

By Lagnajit Pattanaik and Bianca Lepe

This article was published online on August 19, 2020.

MIT's culture is made up of our collective values and beliefs. This means we have the power to shape that culture into one that is more diverse, equitable, and inclusive — but we must all do our part. This July, after years of stagnation, the MIT administration promised again to do its part by hiring a senior officer for diversity at each of its five schools and the new College of Computing. But given the sheer difficulty of addressing each department's unique culture, school-level officers are not enough: Every department deserves diversity.

The RISE campaign is a grassroots effort to fight racism and sexism co-led by Graduate Students for a Healthy MIT, the Black Graduate Student Association, and the Graduate Student Council Diversity, Equity, and Inclusion (DEI) committee. We believe that every department should have its own DEI Officer (DO), who will be empowered to investigate department practices and climate, to meaningfully engage the community, and to push for change where problems are found. The officer position is not a silver bullet, but it is a critical component necessary to dismantle institutional systems of oppression and achieve a more equitable MIT through collaboration between students, staff, faculty, and leadership.

The officer position is not a silver bullet, but it is a critical component.

These goals have traditionally been addressed at MIT through DEI initiatives, developed and executed by students and staff, with occasional assistance from faculty. Although well-intentioned, these initiatives are inherently inefficient. The many responsibilities juggled by students and faculty, the high turnover rate of graduate students, and the general lack of DEI-related expertise make it impossible to meaningfully progress — and the lack of accountability mechanisms means that the administrators involved bear no consequences. Centrally-coordinated diversity professionals are needed at the department level to ease the burden on student advocates, retain institutional knowledge, engage with faculty, develop tailored solutions, and hold the administration accountable for DEI progress. DOs would fill precisely these roles.

Students across schools, departments, and programs have begun advocating for their own DEI officer.

The hiring of DOs within higher education is not a new phenomenon. Fifteen years ago, there were diversity positions at over 120 institutions around the country, usually consisting of a single institute-wide DO. More recently, universities such as UC Santa Barbara and the University of Michigan (UM) have integrated DO roles into academic departments. This shift represents a recognition of the decentralized nature of graduate school: institute-wide initiatives are no longer enough. As detailed in UM's report on DOs, "Each academic unit has a unique culture with unique needs, histories, resources and expectations that should be accounted for when creating organizational structures."

MIT's Aeronautics and Astronautics (AeroAstro) department has already recognized the benefits of a departmental DO, and it is invaluable to learn from their experiences. In Fall 2019, AeroAstro hired Denise Phillips as their inaugural DO. Denise's primary responsibilities include creating programs that engage students and faculty in novel and impactful ways: she hosts a monthly Blind Spot series where speakers facilitate DEI-related discussions, is heavily involved in recruitment, and leads events for under-represented minorities (URM) and women. She also serves as a liaison between faculty and students, facilitating challenging discussions across major power imbalances and advocating for student initiatives, including helping the student group AeroAfro secure funding to send students to conferences to recruit URMs.

In response to the national uprising against institutional racism, students across schools, departments, and programs have also begun advocating for hiring their own DEI officer. This list includes but is not limited to: Electrical Engineering and Computer Science, Chemical Engineering, Biological Engineering, Materials Science and Engineering, Mechanical Engineering, Harvard-MIT Health Sciences and Technology, Institute for Medical Engineering and Science, Brain and Cognitive Sciences, Media Lab, Physics and Sloan. In all of these instances, the drive for change comes from students, and we encourage students to get involved in these efforts in their own department.

Facing student demand, a common response from the administration has been to share DOs across multiple departments—a strategy now being repeated at the school-level. Unfortunately, experience shows that this is not enough. The Biology department shares a Director of Diversity and Outreach (DDO) with Brain and Cognitive Sciences (BCS). Though not equivalent to a DO, the DDO shares the goal of increasing URM enrollment. Yet, the DDO's cross-appointment makes it structurally impossible to attend to both departments' unique needs. While Biology enjoyed early success in increasing URM graduate enrollment from four percent in 2005 to 18% in 2012, BCS's URM enrollment has remained stagnant. This disparity can only be addressed by discipline-specific recruitment efforts. In addition, handling multiple departments overburdens a single officer, leading important issues to fall to the wayside: Since 2012, Biology's URM enrollment began to decrease, reaching 11% in 2018. Furthermore, in both departments, recruitment of Black students remains particularly low.

In response to these issues, the Biology department has acknowledged the need for increased DEI resources, but has not made any official commitments suggesting that such a resource allocation is a priority. BCS has recognized the issue and committed to hiring a department-specific DO, but even with broad faculty support, this DO position has yet to be approved by the administration.

We can no longer afford to wait. We demand a tangible timeline for the hiring of DOs in every department. Vague commitments of time and resources are not enough. In fact, long before MIT reiterated its promise in July to hire school-level officers, the Institute committed to hiring school-level DEI officers in 2007 for the School of Architecture and Planning, in the 2010 Hammond report, and in the February 2020 announcement in response to Epstein and NASEM. Despite these commitments, we still see no clear plan for filling these positions, only contradictory and unclear reports of funding which have yet to manifest.

Departmental efforts to create DO positions are inherently more limited since their budgets vary widely, with some operating on thin margins even in the best of times. While we recognize the economic crisis precipitated by COVID, we still have a duty to allocate resources toward DEI. We have seen clearly that the central administration, with a $3.7 billion annual operating budget and an endowment over $17 billion, can afford to fund these positions. We believe that if MIT can raise $1 billion for the new College of Computing for the future of research and technology, then they can raise the funds needed for investing directly in building an equitable future.

For this effort to be successful, we need a centralized response facilitated by the Institute Community & Equity Office (ICEO). Otherwise, we will continue to see only the most progressive departments hire DOs. Even those departments will do so unreliably, without centralized standards or accountability to a higher body such as the ICEO. A centralized approach will allow the DOs to increase engagement within their program, make progress on climate issues, and be held accountable for doing so.

We need a centralized response facilitated by the ICEO.

We know that this position alone is not enough to fully address the massive challenge of increasing diversity, equity, and inclusion. This is only a first step in what is sure to be a long, significant effort, but it's a great place to start. DOs are a critical component of a more equitable future. It's time for MIT to step up and make it a reality.

If you support this form of change on our campus, please sign our petition, reach out to us at rise4mit@gmail.com*, support our campaign, and join us at a RISE event happening in your department.*

Lagnajit Pattanaik is a PhD student in Chemical Engineering and organizer with RISE.

Bianca Lepe is a PhD student in Biological Engineering and organizer with RISE. Democrats.

GUEST COLUMN

The MechE qualifying exam fails women

Half of all women who failed the MIT Mechanical Engineering doctoral qualifying examination would likely have passed if they were men

By Becca Kurfess, Bethany Lettiere, Jerry Ng, and Nicholas Selby

Half of all women who failed the MIT Mechanical Engineering doctoral qualifying examination would likely have passed if they were men. Although this proportion is appalling, to many of us, it is not surprising.

The MIT Mechanical Engineering qualifying exams are notorious. Students study for months to prepare for the two-day qualifier consisting of three 30-minute oral exams and one hour-long research presentation. Most students pass, but those that do not must repeat the process, forgoing a second semester of research progress to study. If they fail again, they are dropped from the program.

In Spring 2020, we surveyed students who took the qualifying exams in the previous three years based on lists distributed by the department. Our survey requested qualifying exam results and demographic information.

> **The pass rate gap is not the only horrific example of gender bias in the department.**

Of the estimated 143 men and 50 women who took the qualifying exams in the past three years, 83 men and 32 women responded to our survey. As illustrated above, 84% of surveyed men passed on their first try, whereas only 67% of surveyed women passed on their first try, yielding a gender gap of **17 percentage points**. This difference is statistically significant and robust to various tests of response bias. Unfortunately, no individuals identifying as non-binary responded to our survey, which we believe further reflects the lack of gender diversity and equity in our department.

The pass rate gap is not the only horrific example of gender bias in the department. According to MIT Institutional Research, the attrition rate for graduate women in Mechanical Engineering is **27% higher** than for men, far worse than the School of Engineering or MIT as a whole. Furthermore, graduate men in Mechanical Engineering outnumber women **three to one**, and, although that ratio was improving until 2017, it has been steadily worsening since. There are no recorded statistics for students of other genders, which is a failing in itself.

Why is this happening, and how can we change this?

Realistically, the gender gap could be caused by (1) active, explicit and implicit gender bias in evaluations or (2) an exam structure that favors traits traditionally discouraged in women. Based on student testimony, we believe it is both.

To the first cause, numerous studies have shown that there is gender bias in STEM. MIT is likely no exception. This is exacerbated by advisors' ability to advocate for borderline students during the evaluation process. Research has shown that male managers are less comfortable managing women than managing men, and given that 85% of MIT mechanical engineering faculty are men, male students are more likely to have better rapport with faculty responsible for advocating on their behalf. To the second cause, oral exams may particularly bias against women. Research has shown that men, on average, may have more confidence in their abilities than women and/or that women are confident but are penalized for showing it. Additionally, it is common for a female graduate student taking a qualifying exam to be the only woman in the room, which also introduces biased dynamics. While understudied, these biases likely affect other gender minorities as well. Regardless of the explanation, our qualifying exams demonstrate clear gender bias.

The harms of this demonstrated gender bias in qualifying exams are exacerbated by the exam's sink-or-swim nature. A needlessly high-stakes exam is damaging to student mental health, career trajectories, and overall well-being. Students who underperform in the qualifying exams should be given mentorship and opportunities to improve, not threatened with expulsion. There is precedent for a more humane approach: many programs, including Stanford Mechanical Engineering, work with students who fail twice to demonstrate their competency in alternative formats.

> **A needlessly high-stakes exam is damaging to student well-being.**

We presented our findings and possible solutions to our department head and graduate officer in March. They informed us that MIT recently approved funding for our department to hire an equity officer but seemed reluctant to consider needed systemic changes to the qualifying exam structure. Later, they conducted their own analysis of qualifying exam pass rates and also observed a substantial gender gap. Furthermore, they also found a bias in course grades awarded by professors: they reported average GPAs of 4.84 and 4.77 for men and women, respectively. They declined our request to join meetings between them and university administration and concluded, "We believe that a systematic bias cannot be asserted based on the data."

We disagree. The results on qualifying exams are indicative of a broader gender discrimination crisis within our department. The statistics we present here are not just numbers; they represent people. Thirteen percent of surveyed women never passed the exam and had to leave the program. Their futures were permanently changed after losing years of their professional career to graduate school without earning a doctorate. This outcome was directly related to their gender. **This is urgent.** The MIT Mechanical Engineering Department must immediately implement creative solutions and validate them with data.

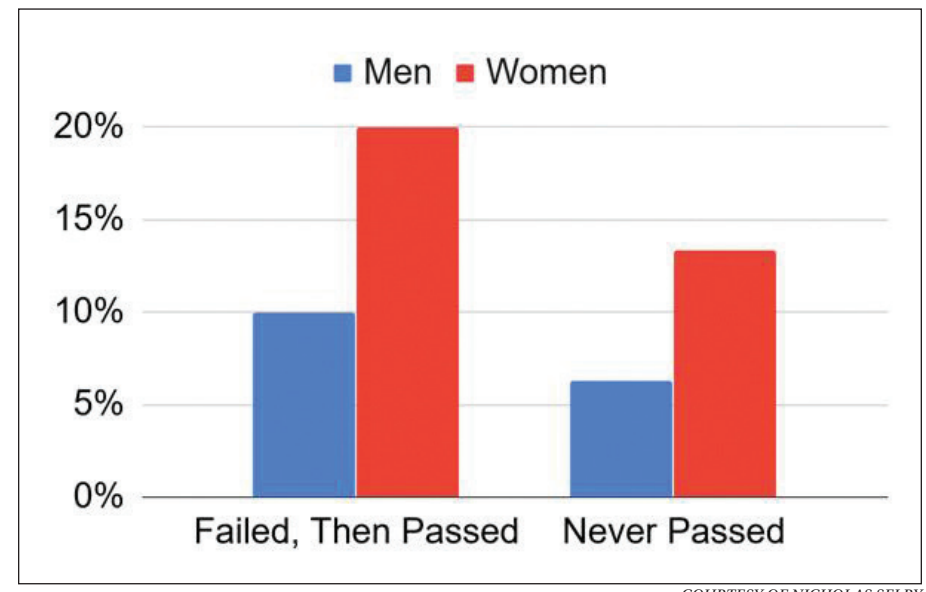
> **We encourage other student advocates to examine your own academic hurdles critically to understand the bias and inequitable barriers they impose.**

To that end, our recommendations for the department are as follows:

1. Restructure the qualifying exams to be course-based, similar to those of AeroAstro and EECS.
2. Arm the incoming Community Equity Officer with the capacity to hold individual advisors accountable for their demographic-specific pass rates (e.g. advising on faculty promotions/raises), develop department strategy, and set priorities to promote justice and support underrepresented groups within the department.
3. Incorporate experts with experience in changing culture around discrimination into the department Visiting Committee to provide consistent attention to the problems existing in our department and the work being done to address them.
4. Require department administrators to report to the department and Visiting Committee on demographic-specific acceptance, graduation, and retention rates, including outcomes on qualifying exams.
5. Make these reports public, reviewed in regular departmental fora.

These issues are broader than just Mechanical Engineering; equity issues at the Institute are pervasive. We encourage other student advocates to examine your own academic hurdles critically to understand the bias and inequitable barriers they impose. In recognition of the need for an institute-wide response in addition to work at the department level, we also support the RISE campaign. RISE is a united effort of MIT grad students that builds on the petition to Support Black Lives at MIT, the Grads for a Healthy MIT mental health campaign, and grassroots department-level student advocacy with a comprehensive list of demands that would certainly make MIT more inclusive for all. Particularly relevant to our department, the campaign calls for departmental Diversity, Equity, and Inclusion officers who are responsible for reviewing and publicizing data, like qualifying exam attrition rates, and advising departmental leadership on modifying practices in response to this data, among other duties. Experience has shown the efficacy of these diversity officers at many other institutions and departments (read more in a recent op-ed titled "Every department deserves diversity"). We call on our readers and the department to sign the RISE petition and join us in advocating for a more equitable campus.

Becca Kurfess, Bethany Lettiere, and Jerry Ng are PhD Candidates in Mechanical Engineering at MIT. Nicholas Selby is a PhD Candidate in Electrical Engineering and Computer Science at MIT. All four authors passed the MIT Mechanical Engineering doctoral qualifying examination.



COURTESY OF NICHOLAS SELBY

Bar chart illustrating the exam pass rates of men and women in the department.

OLDIES BUT GOODIES

An edge-of-the-seat cat and mouse chase

An action thriller unlike any in recent times

By Vyshnavi Vennelakanti

When the movie opens with a beautiful night skyline view of Chicago, there is nothing suggestive of a gruesome murder. However, the background music sets the tone for the film, and the flashbacks in black and white show the murder of a woman without revealing the identity of the killer.

Dr. Richard Kimble (Harrison Ford), a vascular surgeon in Chicago Memorial Hospital, comes home to find his wife Helen Kimble (Sela Ward) fatally injured at the hands of a one-armed murderer. Richard engages in a fight with him, but the murderer flees. Richard is then interrogated, but the police are too quick to dismiss his story. Unfortunately, the circumstantial evidence is against Richard, and he is wrongfully sentenced to death for his wife's murder.

While Richard is being transported to the death row in a bus, other prisoners try to escape, which results in a series of events leading to the bus crashing down a ravine and Richard's eventual escape. The rest of the movie, as the name suggests, is the story of the fugitive, Richard, who is on the run and tailed in hot pursuit by the Senior Deputy U.S. Marshal, Samuel Gerard (Tommy Lee Jones), and his team.

We see Richard as someone who initially just wants to escape from the law in an opportune moment, but then becomes determined to find his wife's murderer before he gets caught. Samuel Gerard comes off as a tenacious officer who will not rest until he has caught Richard, and he and his team go to great lengths for the same. The first face-off between Richard and Samuel reveals the different perspectives of the fugitive and the officer. Richard wants to flee from the law in order to get justice for his dead wife, whereas Samuel does not care about finding the truth; he wants Richard to abide by the law.

The 130-minute movie has a very gripping screenplay and leaves you with no time to linger on any one particular scene. The chase sequences which are engaging and exceptionally choreographed get you praying to the Lord Almighty that Richard will not be caught, and luckily for us, Richard is always one step ahead of the U.S. Marshal team that tracks him!

One thing that remains unresolved at the end of the movie is why Helen was killed in the first place. When Richard finds out who was behind his wife's murder and questions that person as to why Helen was killed, he receives no reply, and we are left wondering about possible reasons why she was murdered. I felt a little frustrated that it was not revealed in the movie, but I think the major focus of the film was the struggle of a man determined to dig out the real culprits behind the murder of his wife rather than why his wife was murdered in the first place.

The movie captures breathtaking views of Chicago, where most of the movie takes place. It features several important landmarks such as the Chicago City Hall, the Picasso, and the Cook County Hospital. If you have been to Chicago, you are sure to say "I've walked on that street" or "I've seen that place!" We also get a glimpse of Chicago's festive St. Patrick's Day celebrations and the Chicago River, which is dyed bright green.

You know that the movie has two actors who are powerhouses of talent when the opening credits are in the order: Harrison Ford and Tommy Lee Jones, followed by the title of the movie, *The Fugitive*. At no point in the movie does one see the actor Harrison Ford; instead, we get involved and empathize with Richard right from the beginning. The fact that Tommy Lee Jones won the Best Supporting Actor Oscar for his performance in this movie speaks volumes about how natural he was in his role. Everyone else does a great job as well in their supporting roles.

Overall, the story of a wrongfully accused man who is on the run and determined to find the killer of his wife while being hunted by a relentless U.S. Marshal is sure to get your heart racing and adrenaline pumping.

★★★★★

The Fugitive

Directed by Andrew Davis

Screenplay by Jeb Stuart and David Twohy

Starring Harrison Ford, Tommy Lee Jones, Sela Ward, Joe Pantoliano

Rated PG-13

Streaming on HBO Max

ALBUM REVIEW

It's Troye Sivan's dream and we're just living in it

Bop along to the Australian's newest EP

In a Dream

Troye Sivan

EMI Recorded Music Australia Pty Ltd.

August 21, 2020

By Ivana Alardín

MANAGING EDITOR

Amidst a pandemic, Troye Sivan's still got some bops he needs to drop. The 25-year-old Australian singer-songwriter is someone whose career I've been following for the past seven years, back when he was just a lowly YouTube sensation. He released his latest EP, *In a Dream*, six years after his first EP and start of his music career, *TRXYE*. I've listened to every single album and EP on the day it was released and bought tickets to a show on each tour he's had, even that one time he had two tours for the same album. The first concert I ever went to was for *Blue Neighborhood* at the House of Blues in Chicago, where I later realized Troye's dad, in a private booth across the balcony, was snapping videos of the guy grooving along in front of me. I then forced this stranger to coerce Troye's dad to come over to the balcony after the show ended, where I confessed my undying love for his son. This poor man looked me in the eyes and with a heavy Australian accent said, "You know he's gay, right?"

I'm still in love with him. Probably his biggest fan. Even went outside in the middle of a funeral when the pre-sale tickets for the Bloom Tour were out two summers ago, just so I could snag some VIP tickets. I'm heavily biased, so this review may mean nothing to you, but I hope it's still a good read. Track by track, here are my thoughts, along with some out-of-context lyrics that fuel the quarantine mood this summer:

Take Yourself Home

Relatable Q Lyric: "sad in the summer"

Just a bop. A solid, classic, Troye Sivan bop. I love this song, and everyone I know who's heard it likes it. "Take Yourself Home" was released earlier this summer as a single for the EP, and similar to other singles for past Troye albums, it's very pop and very catchy. And if you know anything about Troye, you know he's into EDM. The last minute or so of the song is a lyricless, chill, dreamy tune that snaps into up-tempo EDM for the last ten seconds.

Easy

Relatable Q Lyric: "this house is on fire, woo!"

On first listen, I thought this song would be perfect for the part of a rom-com movie where someone realizes their mistake and is running back to their S.O. to re-confess their love and get back together. Anything that involves a montage of running and bustling through a crowd. On second listen, the lyrics tell a different story. I was so thrown off by how happy and up-tempo this song was that I didn't realize it's actually a break up song. Whoops. I like the contrast, though; Troye's always keeping me on my toes. Also a bop.

could cry just thinkin about you

Relatable Q Lyric: "now I'm knee deep in this mess"

I just thought this interlude was weird. It felt almost… country-ish? I was confused by the mix of medleys, and Troye's voice was too distant for my liking.

STUD

Relatable Q Lyric: "what's it like to be so big and strong and so buff? / everything I'm not"

It was hard to see this song on the EP tracklist and not immediately think of the student center. But no, this was not a song about questionable deli meats from the former stud Subway, but instead an emo Troye song about the low self-esteem he's been dealing with while in quarantine (at least this is what I gather from his Instagram). At first, his voice sounded like it was being hidden under a robotic layer of weird EDM crap, but hey, it's a good beat. I got more into it on the second listen.

Rager teenager!

Relatable Q Lyric: "sleeping and spending nights, wasting time"

I really liked the idea of this one, it's a whole message to his younger self. It's pretty cute. This song's a little slower, so it makes sense why it wasn't one of the singles released. Troye (or his manager?) tends to save the catchiest, poppiest song for his singles. The outro to this song felt like it belonged in a storyline video game when the prince is reunited with the princess or some crap like that. Overall, just cute.

IN A DREAM

Relatable Q Lyric: "took a flight all the way home, yeah (Ooh)"

This track really felt like it could've been featured in a John Hughes movie. While listening to this song, I also had the sudden urge to play DDR — I blame the beat. This song is more in line with mainstream Troye: the clap-along-and-sing type of pop song I could see him ending his concert with.

Overall, *In a Dream* was, well, dreamy. Troye was a big fan of distancing his voice and using layers to create echos and a dreamy effect, while maintaining his quintessential pop/EDM tune. Well, except for that weird country interlude. I'm hoping this EP means there's hope for a full-length album sometime soon, similar to how *Blue Neighborhood* started out as the EP *WILD* before 10 more songs were added. If that happens and a tour rolls around, you know I'll have my Ticketmaster app locked and loaded for a presale release.

MOVIE REVIEW

The story of a math genius, overly dramatized

Shakuntala Devi in this biopic comes off as an egotistic protagonist

★★★☆☆

Shakuntala Devi

Directed by Anu Menon

Starring Vidya Balan, Sanya Malhotra, Jisshu Sengupta, Amit Sadh

Rated 13+

Streaming on Amazon Prime

By Vyshnavi Vennelakanti

This article was published online on August 19, 2020.

Shakuntala Devi, a precocious child and famous mathematician, was a household name to many. Renowned as the "Human Computer," her name became synonymous with the concept of mathematics. When I first heard about the making of her biopic, I was thrilled to see how her professional and personal life would be portrayed onscreen. After watching the movie, though, I feel very disappointed that it focused on the strained relation between Shakuntala and her daughter Anupama Banerjee rather than Shakuntala's childhood and achievements.

The movie, narrated from Anupama's (Sanya Malhotra) point of view, depicts Shakuntala's (Vidya Balan) journey from a child to a math genius and a mother. Although several math shows and interviews of Shakuntala are shown, the movie fluctuates too much between different timelines. For example, the film frequently transitions between Shakuntala's married life and Anupama's. These transitions feel confusing, especially given that they do not serve much of a purpose.

The movie also makes unmotivated changes to factual events in Shakuntala's life. For instance, the film claims that Shakuntala had been identified as a prodigy at the age of five when she gave the cube root of a number by mental computation, whereas in reality, her potential to memorize card tricks was discovered by her father when she was just three years old! Also, the famous BBC interview that took place when Shakuntala was only 14 where she says the computer gave the wrong answer was shown in the movie to have taken place when she was 26 years old. Although the movie captures these moments, the factual errors are not fair to her legacy and underrepresent her brilliance.

A lot of time was spent on dramatizing personal events in Shakuntala's life using fictionalized moments while other sequences were rushed. Devi's political campaign could have been shown in more detail rather than glossing over it for a minute. Shakuntala Devi has mentioned in the documentary *For Straights Only* that she took an interest in writing the book *The World of Homosexuals* after her marriage to a homosexual man. The movie sharply contradicts this fact by showing that Shakuntala called her husband a homosexual only to popularize her novel. This only serves to portray her as someone who believes that "the ends justify the means," even if it involves accusing someone wrongly which, in reality, may not have been her nature. For most of the movie, Shakuntala Devi comes off as a self-centered protagonist who is oblivious to the fact that she is exceptionally egotistic.

However, the movie also has its merits. The film exquisitely illustrates Shakuntala's multifaceted personality and interests; in addition to being a mathematician, Devi was also an astrologer and writer, and she even tried her hand at politics. As opposed to framing her as a stereotypical nerd, the film portrays Devi as an extroverted person who is the life of the party, just the way she was in real life. The movie also has humorous scenes, like when Shakuntala's father asks teachers at her math show to give her difficult questions so that she doesn't get bored!

The movie definitely strikes home the message that Shakuntala strongly believed in: be who you are and live life to the fullest because life is too short to care about what others think of your actions. The veteran actress Vidya Balan shines in her role, bringing to life the undying spirit of Devi which was far ahead of its time. Sanya Malhotra also does a great job capturing the emotions of a daughter who has a strained and troubled relationship with her mother, which includes always being identified as Shakuntala's daughter and not as Anupama Banerjee.

Overall, the movie has some brilliant sequences but is highly dramatized and comes off as more focused on a daughter's resentment towards her mom than the story of Shakuntala Devi herself.

ALBUM REVIEW

folklore: a melodic anthology of quarantine musings

Taylor Swift's surprise eighth album unsurprisingly impresses

By Joanna Lin and Vaishnavi Phadnis
STAFF WRITERS

This article was published online on July 31, 2020.

On July 23, Taylor Swift surprised fans, announcing that she would be dropping an entire album, music video, and complete set of merchandise at midnight. Written in isolation and released only a year after her last album, *folklore* comes as an unexpected delight, brightening these unprecedented times.

folklore doesn't disappoint, as Swift does what she does best: pour her heart out with lyrically and melodically haunting beauty. The word 'folklore' refers to oral traditions passed down in cultures and societies, and accordingly, the album feels like a cohesive anthology of stories. These rich narratives both encapsulate slivers of American culture (e.g. "the last great american dynasty") and echo numerous themes from Swift's previous songs. "august" sounds like a mature retelling of "Tim McGraw" mixed with "Cruel Summer" and "Getaway Car"; "the last great american dynasty" like "This Is Why We Can't Have Nice Things"; "mad woman" like "Look What You Made Me Do" and "The Man"; and these parallels are only the beginning.

Each song is also jam-packed with lyrics referencing other songs on this album, which Swift reportedly did intentionally for her fans. Mad women, alcohol, the Roaring 20s, movies, and cardigans serve as the invisible strings that tie the album together. With more vivid imagery and gorgeous figurative language than ever before (e.g. "you drew stars around my scars," "August sipped away like a bottle of wine"), Swift returns to her greatest strengths as a singer-songwriter while demonstrating significant growth and acute maturity.

Despite its lyrical appeal, however, the album is a bit monotonous. A few too many slow, stripped-down piano ballads make it difficult to enjoy on a first listen. Though its cohesiveness is one of *folklore*'s standout strengths, many songs are consequently backed by a similar wall of sound that makes them hard to distinguish. Most of the melodies consist of short verses and return to the same themes of romantic or platonic heartbreak.

In contrast, the upbeat tunes on folklore are reliably enjoyable. "invisible string" is the perfect example of a hopeless romantic song you might hear in the soundtrack of a coming-of-age movie — undeniably adorable. "the 1" is a chill, playful, yet melancholy reflection on what could have been. And "august" may be one of the strongest songs on the album, lively but heartbreaking, and perfect for this cruel summer: "so much for summer love."

folklore is the third in a string of albums of drastically different aesthetics, following revenge-fueled *Reputation* and bubblegum-pop *Lover*. Released as her first alternative album, folklore marks a return to Swift's acoustic country roots and a departure from her recent pop-leaning trajectory. At the same time, Swift continues to step away from her previous young teenage girl reputation, with increasingly scandalous imagery and even a few explicit tracks.

folklore

Taylor Swift

Republic Records

July 24, 2020

As always, Swift meticulously masterminds every aspect of *folklore*'s release, from directing the first single's music video to aligning "the 1", "seven", and "august" to track numbers 1, 7, and 8; from the aesthetic of each lyric video to the deluxe physical covers, each named after a line in the album. This beautiful album appears to be dedicated to the fans who have grown up with her. We can't be sure what to expect from her next, but until then, we'll have *folklore* playing on repeat.

MOVIE REVIEW

War never ends

Spike Lee's new film stares straight into the face of trauma, Blackness, and the struggle for resilience

By Lulu Tian
ASSOCIATE ARTS EDITOR

This article was published online on August 19, 2020.

Spike Lee's latest film gives history a long overdue update by voicing the experiences and psyche of Black soldiers. *Da 5 Bloods* centers around four African-American Vietnam War veterans who return to Vietnam, where their friend and leader, "Norm" (Chadwick Boseman), was killed. Their trip is motivated by two goals: find Norm's body, and get the gold that they buried back when they were fighting the war.

Before the plot begins, a montage of footage and photos from the chaotic Vietnam War-era America highlights America's injustices against foreigners and Black Americans alike, as well as efforts for peace and equality. The mixed media used throughout the film continues this collage effect, layering photographs of historical figures and moments, black and white videos, and news clips, all creating a rich sense of time and history. The film also creates a distinct visual experience for flashback scenes to the Vietnam War, narrowing the frame to create a dated aspect ratio and raising the contrast and color saturation. This filter exaggerates the greenness of the wilderness that the five Bloods fight in as well as the rustiness of the barren soil and bloodshed. When the frame widens back to the present day, it looks like a completely different movie.

That jolt between present and past is exactly how the four friends, Otis (Clark Peters), Paul (Delroy Lindo), Eddie (Norm Lewis), and Mel (Isaiah Whitlock Jr.) feel upon revisiting Ho Chi Minh City for the first time after many years. It has changed into a place where they can check into fancy hotels and enjoy drinks in the company of Vietnamese strangers. Yet even from the start, everything around them, from spotting a legless Vietnamese child to being heckled by vendors, causes flashbacks and fear. Long scenes of uninterrupted conversation reveal the characters' personalities and predispositions, in particular Otis' calm, wise demeanor and Paul's controversial MAGA attitude. In hindsight, every bit of the dialogue foreshadows future events, yet in the moment seems completely natural.

Norm is a martyr of sorts in the film — a leader who taught Otis, Paul, Eddie, and Mel about Black history, morals, and bringing pride to their people. While the trip's goal is to honor Norm and those values, their memories are slowly eaten away by the burdens of Blackness in America and racial tensions in Vietnam, on top of the inherent isolation of post-traumatic stress disorder (PTSD). With all of these factors, it is hard for the characters to keep their original goals in sight.

Each character deals with their memories in a different way, from Paul openly expressing discomfort with Vietnamese people to Otis revisiting an old Vietnamese lover. It's impossible for any of them to fully understand what the others have been through. Lee portrays PTSD as sporadic and all-encompassing, capturing the aspects of a condition where someone may appear unaffected one moment and inexplicably troubled in another. Trauma lingers in unseen and irrational ways, and instead of trying to explain that, the film takes the opportunity to play this psyche out to its fullest.

The forest becomes a visual landscape of fear as the four friends, along with Paul's son David (Jonathan Majors), enter to search for Norm and the buried gold. Their surroundings become greener and closer to the wartorn wilderness seen in the film's flashbacks to the war. Pieces of the characters' pasts emerge and become catalysts for division. The film builds the underlying tension that starts as soon as they arrive in Vietnam into powerful moments where exaggerated projections of their traumas consume the men.

Within this constant momentum, Lee finds the space to capture long conversations from one angle or hold the focus on intense discomfort or pain. These shots sit in on the characters' private thoughts as they deal with the endless tirade of struggles during their journey. The cinematography itself reflects their inner feelings: Lee is unafraid to use invasive and haunting visuals to emphasize the bitter realities of what it means to revisit the past and deal with its impacts on the present and future. The different ideologies and lives of the characters push the camera's gaze on a wide variety of themes, from fatherhood to wealth to racism. The characters cannot avoid these realities, and *Da 5 Bloods* doesn't look away either.

Towards the beginning of the film, the Bloods joke about the kind of "Holly-weird" war films like Rambo that try to glorify the ugly past. "I would be the first cat in line if there was a flick about a real hero," Otis laments. "One of our blood, someone like Milton Olive." While *Da 5 Bloods* does briefly mention Milton Olive, an 18 year old Black soldier who sacrificed himself to cover an exploding grenade, it's really about the lives of Black soldiers who sacrificed for a country that struggles to reciprocate. The story feels very personal to the main characters, and yet it's also part of something larger. Despite exposing the hypocrisy and dark sides of patriotism, the film also conveys pride in one's culture. It's about the realness of fear and how it can carry into every aspect of life. The film highlights twisted, uncomfortable truths the whole way, but somehow in the end, there's a feeling of hope.

★★★★★

Da 5 Bloods

Directed by Spike Lee

Screenplay by Spike Lee, Kevin Willmott, Paul De Meo, Danny Bilson

Starring Delroy Lindo, Clarke Peters, Chadwick Boseman, Isaiah Whitlock Jr, Jonathan Majors, Norm Lewis

Rated R

Streaming on Netflix

ALBUM REVIEW

The Chicks discover liberation in divorce

14 years since their previous record, passions run high in new album

By Wenbo Wu
EDITOR

This article was published online on July 31, 2020.

A lot has changed since the country music trio Natalie Maines, Emily Strayer, and Martie Maguire of The Chicks (formerly The Dixie Chicks) released their last album *Taking the Long Way* in 2006. Their newest record, *Gaslighter*, is based on lead singer Maines' divorce last year from a 19-year marriage. Indeed, *Gaslighter* feels lived through with its consistently strong and moving vocals and instrumentals. Here is my track-by-track take.

Gaslighter

The opening track teases what went wrong in Maines' marriage with various forms of the word "lie" repeating throughout the song. "Gaslighter" is just that: a teaser to set up the conflict to be addressed by the rest of the album. For example, the second verse hints at something transpiring on a boat, but does not give any details, leaving the mystery unresolved until the eighth song on the album, "Tights On My Boat."

This song showcases the strongest vocal harmonies on the record with its chorus, highlighting an anger unparalleled elsewhere on the album. The verses are more stripped-down to focus on the story behind Maines' divorce, though my favorite part of the song will always be the raw emotion on the bridge as Maines sings: "I'm your mirror / Standin' right here until you can see how you broke me."

Sleep at Night

This song has my favorite line on the whole album ("My husband's girlfriend's husband just called me up / How messed up is that?") and begins with a killer drum and banjo intro. (A close runner-up is "Remember you brought her to our show at the Hollywood Bowl / She said, 'I love you, I'm such a fan' / I joked that you can love me as long as you don't love my man / There's nothin' funny about that.")

Unlike "Gaslighter," pain overpowers rage as the primary emotion of this track. Maines questions how her husband is able to sleep at night or even look her in the eyes knowing that he's been having an extramarital affair. This is the first song of three (along with "Julianna Calm Down" and "Young Man") on the album that emphasize Maines' concern for their children having to deal with a chaotic family life ("But then I think about our two boys trying to become men / There's nothing funny about that").

Texas Man

This track has a marked tonal shift, liberating listeners from the heaviness of the first two songs, and finds Maines musing on being single. She comments on her needs of having someone willing to sleep with her despite the fact that she's not exactly "top market" or a "new model."

With this being my favorite song on this record, there comes a great responsibility to remain as objective as possible. Scratch that. It's probably the greatest song of 2020. This song speaks of how the way to the singer's heart is through her mind, which, honestly, as a Texan man myself, who's to disagree?

There is a twangy, upbeat feeling to the entire song, and I absolutely love the string instrumentals before the bridge. Overall, the song's composition and production exude a sexual passion that disguises the singer's desperation and despair, something rarely explored in other physical intimacy songs.

Everybody Loves You

The first ballad on the album packs an emotional punch straight to the gut. I commend the concerto-level string instrumentals prior to the song's outro, which gave me proper time to shed some tears.

Maines wonders why she is alone when it comes to hating her ex-husband while everyone else seems to love him. She bemoans how she now has to lie to comfort herself in order to sleep at night, a kind of hypocrisy that contrasts with the message in "Gaslighter" and "Sleep At Night."

She repeats the phrase "it's my body," showcasing her struggling to cope with what she viscerally feels despite everyone else seemingly knowing better and telling her how she should feel. The song has a strong closing statement to all these people: "Do they know that I regret you? / Do they know I shouldn't have to?"

For Her

My review of this track will be relatively short, because it's one of those songs best listened to in silence, letting the emotions just wash over you. I adore how the production and harmonies escalate over the course of the song's five-and-a-half minute length while always giving room for Maines' emotive voice to shine. Lyrically, this ballad is a song of encouragement to her younger self and to all other girls going through rough times.

March March

There's an interesting contrast between the battlefield atmosphere of the music, created by a steady bass drum in the production, and the lyrical content of this song, which criticizes the government's inaction over issues like gun violence or school shootings. The song references the Trump administration's various failures from its insensitivity over women's rights to attacks on journalism. The Chicks have never held back on political views, and this song's message is certainly an important one.

The only qualm I have is that in the context of a divorce record, the song seems thematically dissonant. Regardless, I can't think of anywhere else the track would fit, or when would be a more appropriate time to release it, so I'm happy with it being on this album.

My Best Friend's Weddings

I love parallelism in songwriting, and this song takes it to the next level. Maines sings about being at the same best friend's two different weddings many years apart . At this first wedding, she meets her husband who she gradually comes to realize she's better off without. Then, she sings though she can "see a wildfire comin' / Burnin' the world I know," she has become stronger with dealing with loss and that her ex-husband should "Watch me, watch me outrun it / Take what I need and go." Finally, at the end of the song, she returns to the second wedding, concluding that "Guess from ashes, we can really grow," adding that she's willing to go this path alone, showing Maines' growth since her own divorce.

Tights On My Boat

This track is the sassiest and shadiest song on the record, and I am living for it. Maines constantly reverses upon her statements for sarcastic effect, such as starting off the first verse by wishing her man to die "peacefully" in his sleep before going back and saying "Just kidding, I hope it hurts like you hurt me." I adore the stripped-down acoustic guitar over the simple pre-chorus and chorus, which respectively repeat "And you can tell the girl who left her tights on my boat / That she can have you now" and "You're gonna get what you got comin' to ya."

This song also has prominent spoken portions that jab at the singer's ex-lover. For instance, in reference to the refrain in the pre-chorus, Maines coos, "Yeah, you can call her right now / And tell her that she can have you right now," acknowledging that although she's not speaking most of her insults, those that are sung shouldn't be taken any less seriously.

Julianna Calm Down

The song is a breakup song, but its concept is refreshing, written as an instruction manual for the band members' daughters for what they should do if a man ever breaks their hearts. Indeed, the song calls out each of Strayer's and Maguire's daughters by name. My favorite line is in the chorus, which involves wordplay between putting on clothes and putting on a fake smile to conceal grief: "So just put on, put on, put on your best shoes / ... / Show off, show off, show off your best moves / And do it with a smile so that no one knows it's / Put on, put on, put on."

The production begins as a solo organ in the backing track, gradually layering to add percussion, melodica, banjo, and strings. This provides an escalating feeling that empowers listeners, reflecting how one may emerge stronger after going through a difficult breakup. However, the production remains relatively simple and never overwhelms Maines' powerful vocals.

Young Man

Musically, this song is the most "country" of anything else on the record: the backing track consists largely of acoustic guitar and strings with few other flourishes thrown in. This song is the final song on the record that references the band members' children, and as I've come to expect by now, it is a moving one.

It's written like a love ballad but is for Maines' sons whom she commends for having to grow up and become men amidst a fiery divorce. It's a tearjerker for sure, with Maines telling her sons in the chorus that while she has done her best to support them, they should live without having to suffer as she did: "Young man / Take a good look at my life and / Try to understand / ... my blues aren't your blues / It's up to you." This chorus may also reference Neil Young's folk song "Old Man," which contains the line "Old man take a look at my life / I'm a lot like you."

Hope It's Something Good

Whereas previous tracks have shown more of the rage or despondency in Maines' divorce, the penultimate song shows a softer side. It shows Maines trying all sorts of ways to pass the time and distract herself from reality. She addresses issues of being too scared to speak up in a toxic relationship, but simultaneously expresses regret for the years she spent under the illusion that she found her life partner. Every chorus swells in the harmony, adding not merely incredible sonic but also emotional depth.

Ultimately, though, the song sees Maines finding closure, singing at the conclusion of the song, "If you're gone / I hope it's really worth it / ... / Thought you'd found your better half / I hope she's something good," the final "she" of course referencing the girl with whom her husband cheated.

Set Me Free

The final track of the song has unremarkable production, which I mean in the best way possible. There is little except a simple guitar, cello, and ukulele backing track to accompany Maines' soaring emotion. This song is a perfect closer, wrapping up much of the conflict set up through the rest of the album, with Maines admitting how "exhausting" it is to hate her husband.

For the first time on the record, she recognizes that maybe the marriage wasn't *all* bad in the pre-chorus: "Just because you've been a bad guy / I've seen it with my own eyes / There's a good guy in there." The song concludes with Maines begging her soon-to-be-ex-husband to sign the divorce papers already and set her free, if only for the sake of "decency."

Although, sonically, one may argue whether the album is "country" with its production ranging from rock to fully stripped down, there is little debate that *Gaslighter* is a solid record with lots to say.

LAB SPOTLIGHT

Hen's hunt for neutrinos

MIT's Hen Lab finds creative ways to study nature's most elusive particle

By Quinn Brodsky
STAFF WRITER

This article was published on August 19, 2020.

The neutrino: a tiny, nearly-massless white rabbit that has haunted physics for years. Originally postulated by Wolfgang Pauli in 1930, the neutrino was an accounting tool used to satisfy certain conservation laws in processes like beta decay, where, for example, a neutron becomes a proton by emitting an electron and a neutrino.

The neutrino is a type of lepton, a class of fundamental particles in the Standard Model. Leptons come in two types: electrically charged leptons, which consist of the familiar electron and its heavier cousins, the muon and the tau; and electrically neutral leptons — neutrinos — which are the electron neutrino, muon neutrino, and tau neutrino, named according to their charged leptonic partners. For instance, a neutron decays into a proton, and electron, and an electron neutrino.

Since Pauli's postulation, various efforts have been made to detect the neutrino and thus prove its existence, but since it is electrically neutral and its mass is incredibly small — originally thought to be zero — physicists have had a very difficult time studying neutrinos. Only in 2015 was it discovered that neutrinos have mass at all, and now high-energy physicists are chomping at the bit to learn more about this mysterious little particle.

The 2015 Nobel Prize in Physics was awarded for the discovery of neutrino oscillation, which describes how neutrinos can switch among the three flavors. Perhaps at some point, a physicist will detect a beam of electron neutrinos, then at a later time they will find that some of the electron neutrinos are now tau neutrinos, or muon neutrinos. This is one of the only experimentally observed phenomena of neutrinos which is hard to explain in the context of the Standard Model. However, for the Hen Lab, interesting observations are not daunting enough — they actually measure these oscillations to learn new physics about neutrinos.

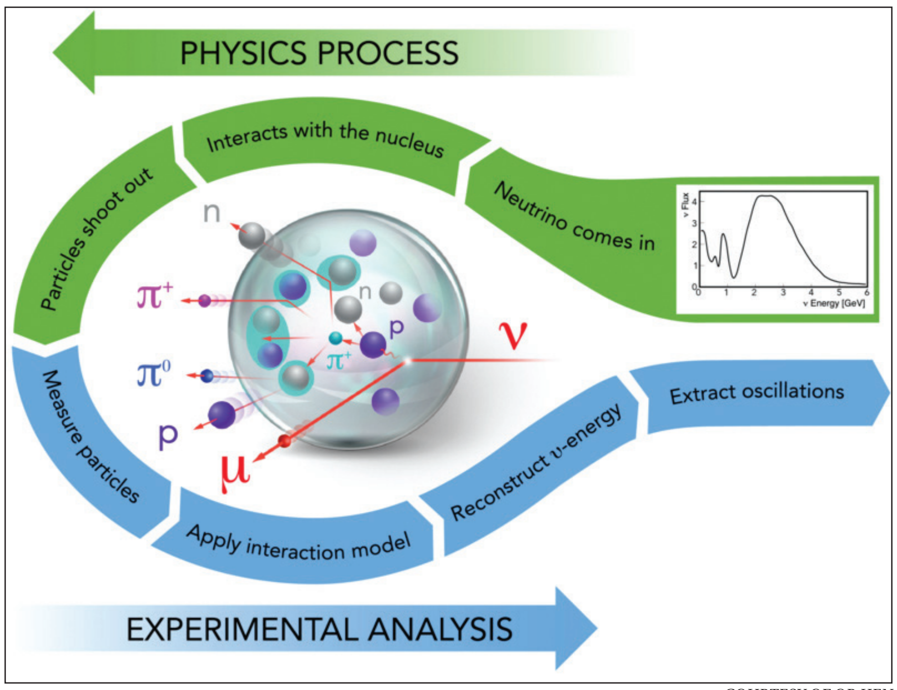
The Hen Lab is one of the Institute's most unique groups; not only is the lab made up entirely of women — except for Or Hen, the group's namesake — but also the lab studies nature's most elusive particle in a very special way. The Hen Lab is an experimental nuclear physics group, and they study the structure of the nucleus through scattering experiments. "We're basically like five-year-old kids," says the group's primary investigator, Or Hen. "We take an atomic nucleus, we throw stuff at it to break it apart, and then use big detectors that measure the stuff that comes out to understand how it's built." From these scattering experiments, the group reconstructs energy and other conserved quantities and aims to learn how the nucleus behaves. The group uses the scattering information to study neutrinos.

One of the group's many exciting projects is the "Electrons for Neutrinos" project. This project takes advantage of the fact that electrons and neutrinos behave similarly in scattering experiments without having to rely solely on neutrinos, which are notoriously hard to detect. In these scattering experiments, they allow an electron to interact with a nucleus, and they detect the particles that shoot out from this interaction. From these final-state particles, they use energy conservation to reconstruct the energy of the initial particle and use data to uncover the "black box" interactions inside the nucleus.

However, beams of neutrinos are hard to control and often contain neutrinos with a range of energies, which adds more complications to the reconstruction process. Particle accelerators nowadays allow scientists to "tune" the energies of electrons in order to precisely conduct experiments, a method that is not feasible for neutrinos.

There is a very useful fact, known as the nuclear environment effect, that makes it easy to substitute electrons for neutrinos in scattering experiments: when a particle like a proton is scattered out from a nucleus, there is no information that tells the observer what type of interaction made the proton fly out from the nucleus. So if it was a neutrino or a proton, the experimenter wouldn't be able to tell — up to this point, the physics is the same. Taking advantage of not only this useful fact, but also the ability for scientists to "tune" electron energies, the Hen Lab is able to effectively study neutrinos by studying electrons instead. This allows the group to study the physics that neutrinos and electrons have in common without only relying on the headache of detecting neutrinos. Moreover, it bridges the gap between the nuclear physics community and the neutrino community, a rare occurrence.

The road to finally running a nuclear or particle physics experiment is long. Typically, these types of experiments use big accelerators like the Large Hadron Collider, and these accelerators take decades to develop and construct. And for experimentalists to even use these accelerators, they have to wait in line behind other scientists who hope to use the accelerators for their own projects, so it can be quite a while until a lab is able to actually perform their experiments. To overcome this obstacle, the Hen Lab, which relies on data from Jefferson Lab's CEBAF Large Acceptance Spectrometer (CLAS), is approaching the problem from a data-driven standpoint. "In neutrino experiments we rely on good simulations of neutrino interactions with the nuclei. Those need to be constrained using external data," says postdoc Adi Ashkenazi, a member of the Hen Lab. Over its many iterations, CLAS has produced lots of data that is ready to use. "Even though the CLAS experiment was constructed and operated a long time ago, its data is most relevant for this purpose." Equipped with knowledge that was unavailable when the data was initially taken, the Hen Lab can analyze the data using their new methods, which in turn encourages the neutrino community to support further experiments in the field.



COURTESY OF OR HEN

The Hen Lab's "Electron for Neutrinos" project detects particles through scattering experiments where an electron interacts with a nucleus.

Anjali Nambrath '21, one of the Hen Lab's UROP students, is using deuterium, a hydrogen isotope, to improve the group's methods. "Deuterium is very simple, [...] so nuclear interactions can be abstracted away and you can look at the energy reconstruction technique in as close to a vacuum as you can get," she says. This is an example of the group's unique approach, unifying methods used by both experimentalists and theorists. By approaching the "two-body problem" of deuterium, the group can improve the reconstruction methods employed in experiments that use more complicated targets like argon.

As the Hen Lab's methods get more precise, the group is looking forward to a promising future. "This next decade will be the most exciting for neutrino physics," Ashkenazi says, as she believes the decades-long process of planning and constructing experiments is coming to an end, and finally the plentiful epoch of data collection and analysis is approaching. Afroditi Papadopoulou G, a graduate student in the group, is excited to improve the analysis of data from experiments like MicroBooNE, and she looks forward to the summer of 2021 when Jefferson Lab will be dedicating half of its beam time to producing data that will support the Electrons for Neutrinos project. Nambrath will be leading research like this at just the right time, when experiments have been built and tested and are producing lots of data to study.

Hen himself has seen the Electrons for Neutrinos project grow from a small group to a large collaboration. "There are very few significant collaborations in the field. We are in the process of becoming one, and that's super exciting," he says, and he is excited to see the project continue and unite the many interdisciplinary subfields of physics. He has high hopes for students and their ability to contribute to diverse collaborations. He encourages students to do what Anjali did as a first year: take a leap, reach out to a group you're interested in — no matter how scary — and get involved. It has reached this far already, and the Hen Lab is certainly one to watch in the coming decade.

Fun

Case

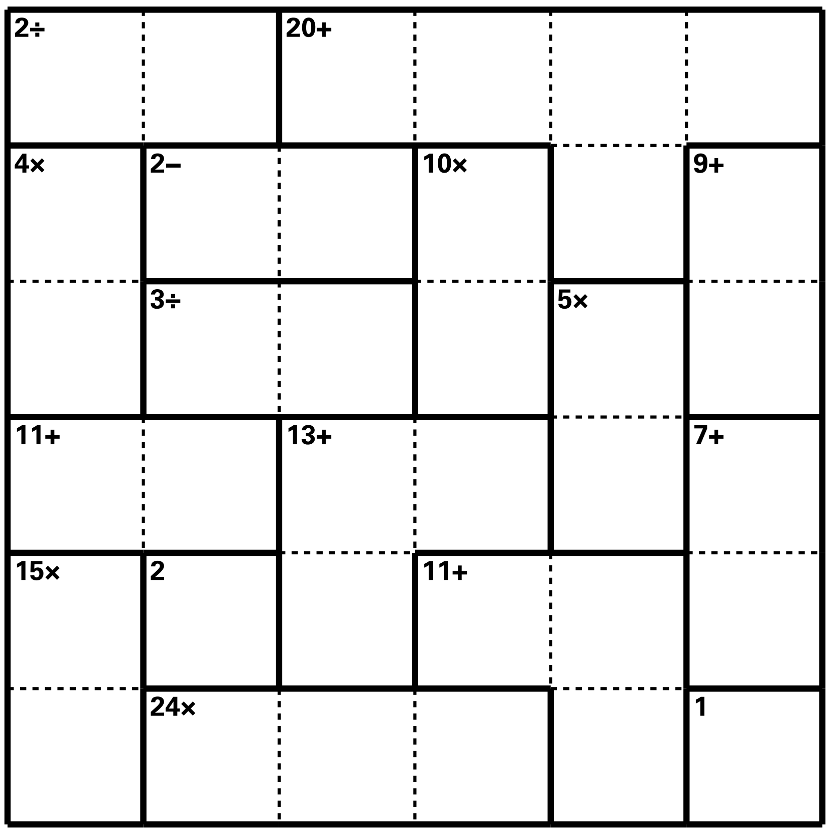
Solution, page 20

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

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

Pencil

Solution, page 20



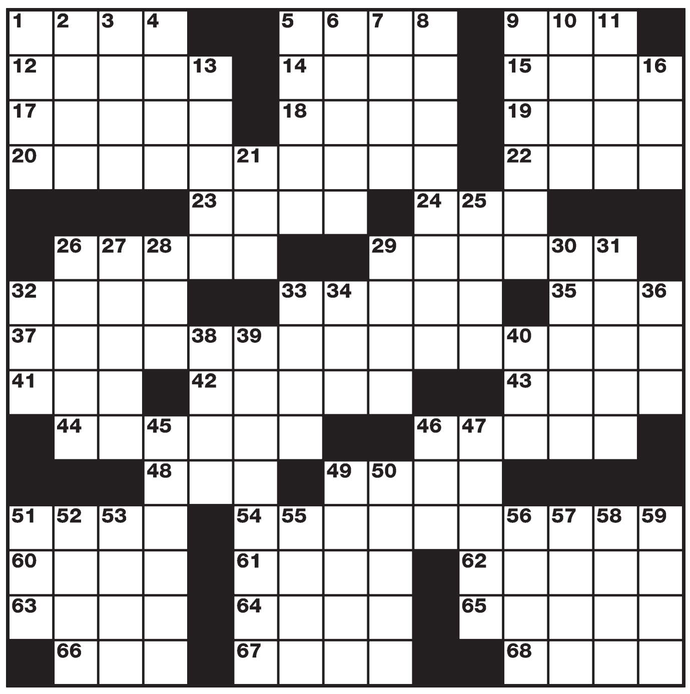
Instructions: Fill in the grid so that each column and row contains exactly one of each of the numbers 1–6. Follow the mathematical operations for each box.

Fixing Breakfast by Brad Wilber

Solution, page 20

ACROSS
1 Crunchy layered sandwiches, for short
5 Campus housing
9 Swiss peak
12 Was furious
14 Notion
15 Long African river
17 Poet Dickinson or Post of etiquette
18 Large disk in a pagoda
19 Joint above a shin
20 Device to cook gridlike batter
22 Lose air, as a tire
23 Crawling colony insects
24 Metal that's mined
26 Guy with golden hair
29 Not as far
32 Hawaiian feast
33 Personal characteristic
35 Ending for spoon or hope
37 Device to make strong coffee
41 __ Moines, IA
42 Capital of Japan
43 Female singing voice
44 Four-door cars
46 Jobs for detectives
48 Flavor enhancer initials
49 Reach across, as a bridge
51 Artist Salvador __
54 Device to fry pork strips
60 Teheran's country
61 Nest egg accounts: Abbr.
62 Fix, as a loose shoelace
63 List of meal choices
64 Make furious
65 Long (for)
66 Commercials and billboards
67 Father's Day honorees
68 Without air, as a tire

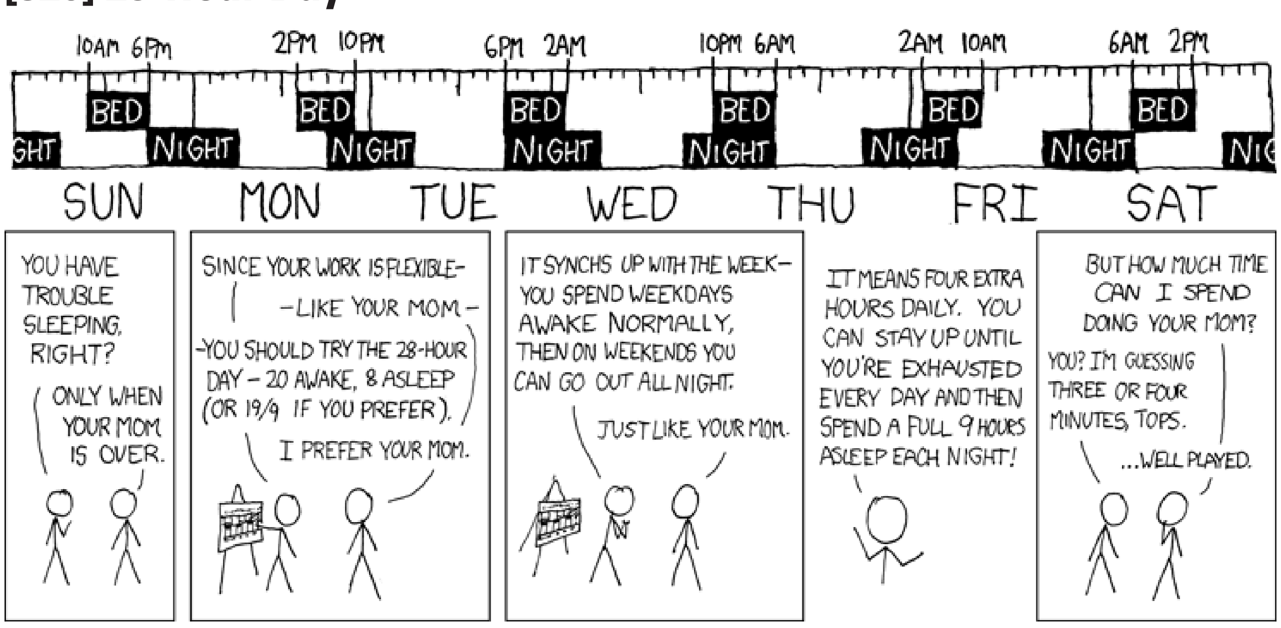
DOWN
1 Make beer or tea
2 The Dalai __
3 Workweek-ending shout
4 Egotist's top priority
5 Two-__ number (11 or 99)
6 Aromas
7 Nevada casino city
8 Majestic southern tree
9 Lower-leg joints
10 Row of people waiting
11 Urgent request
13 Bob who wrote "Blowin' in the Wind"
16 "A mouse!"
21 Conclusion
25 College military program: Abbr.
26 Vehicles for school kids
27 Run out, as a subscription
28 Belonging to us
29 Garb meant to disguise, for short
30 Submit tax returns online
31 Smallest pups in a litter
32 Was first on a trail
33 Clicking sounds of disapproval
34 Pop singer Orbison
36 Lion zodiac sign
38 Incoming flight stats: Abbr.
39 Canary or robin
40 Possesses
45 Near-failing grade



46 Is able to
47 Furious
49 Burn with hot water
50 Sits for a photo
51 Poorly lit
52 Neighborhood
53 Conclude a plane flight
55 Opera solo
56 Lagoon's coral structure
57 Slanted typeface: Abbr.
58 Former Italian money
59 Gave temporarily

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

[320] 28-Hour Day



Small print: this schedule will eventually drive one stark raving mad.

iPad

Solution, page 20

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

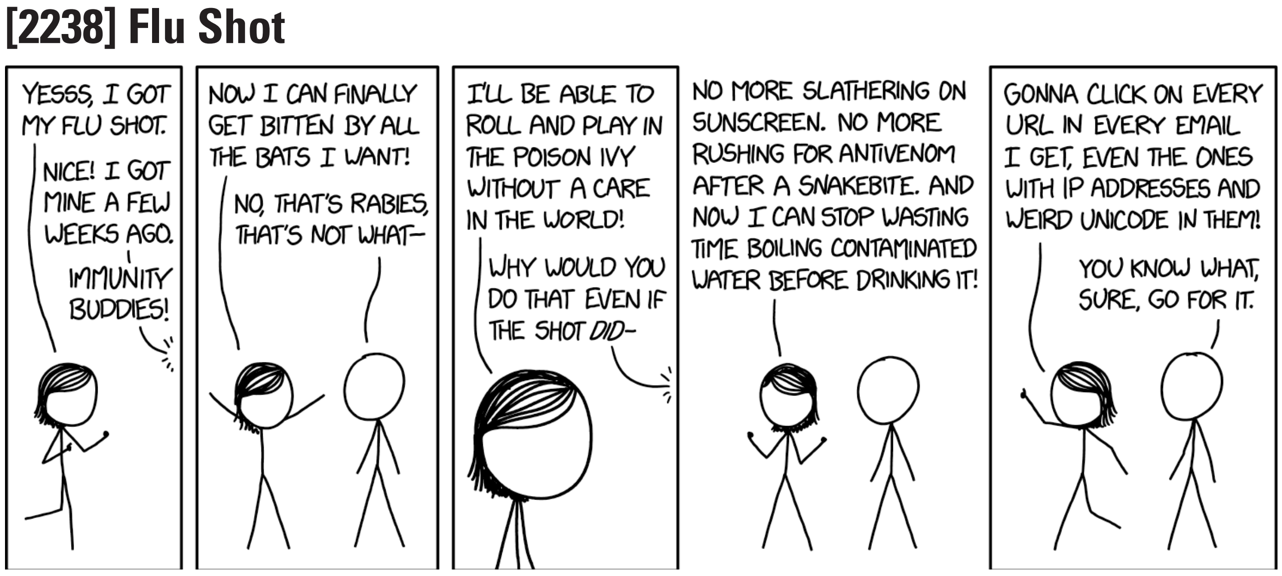
Instructions: Fill in the grid so that each column, row, and 3 by 3 grid contains exactly one of each of the digits 1 through 9.

xkcd

A webcomic of romance, sarcasm, math, and language

by Randall Munroe

[2238] Flu Shot



„Wait, how often are you getting bitten by snakes? And why are you boiling water?" „Dunno, the CDC people keep showing up with complicated questions about the 'history of the property' and 'possible curses', but I kinda tune them out. At least one of them offered me the flu shot."

Students in violation of policies may lose campus access in future semesters

Quarantine Week, from Page 1

proved pod, students can "relax a little more in each other's private rooms or designated reserved common spaces" without maintaining six feet of physical distance or wearing face coverings.

Students living on campus will be tested twice weekly and will view their testing status, completing daily health attestations on the COVID Pass app. Visitors are not permitted in residence halls, and students are discouraged from "visiting with friends living off campus." Additionally, students living off-campus "must adhere to the safety and health protocols required by the city and state where you live" and should not "throw parties or organize gatherings," Barnhart, Waitz, and Nelson wrote.

Students with an MIT ID and a valid COVID Pass can be "granted access to a limited number of non-residential campus buildings" based on "academic or research needs." Students must complete their daily health attestation within 30 minutes prior to entering the building.

Administrators "will strictly enforce the testing and health attestation rules, and additional staff will be visible in the residence halls to help educate and remind residents about Covid-19 policies and assist house teams with compliance." Students who violate MIT policies may be "restricted from campus facilities, removed from MIT housing, or referred to the Committee on Discipline, possibly leading to a suspension or loss of access to campus in future semesters."

Several universities, including Princeton, Columbia, and Caltech, have changed their reopening plans to a fully remote semester for undergraduates. Barnhart, Waitz, and Nelson wrote that "MIT's decision to stick with our reopening plan… is grounded in our trust that MIT students will rise to the challenge."

Departments remove GRE requirements for 2020–2021 cycle

All graduate programs in School of Engineering, School of Science will not require GRE for admissions

By Kylee Carden
STAFF REPORTER

This article was published online on August 26, 2020.

Many MIT departments have made Graduate Record Examinations (GRE) optional or are not accepting scores for the 2020–2021 graduate admissions cycle.

In the School of Engineering, Aeronautics and Astronautics, Chemical Engineering, Civil and Environmental Engineering, Materials Science and Engineering, Nuclear Science and Engineering, and Medical Engineering and Medical Physics are not accepting GRE scores for the 2020–2021 admissions cycle. The departments of Mechanical and Biological Engineering and the Institute for Data, Systems, and Society have made GRE scores optional.

In the School of Humanities, Arts, and Social Sciences, the History, Anthropology, Science, Technology, and Society graduate program are not accepting GRE scores this cycle. Political Science and Philosophy have stated that they will make GRE scores optional for the 2020–2021 admissions cycle.

In the School of Science, Earth, Atmospheric, and Planetary Sciences; Chemistry; Mathematics; and Physics will not be considering GRE scores for the 2020–2021 admissions cycle.

The Linguistics, Electrical Engineering and Computer Science, Biology, and Brain and Cognitive Sciences departments have not required GRE scores since before this admissions cycle.

The GRE General and Standard Tests are standardized tests traditionally required for admission into graduate programs in the U.S. GRE Subject Tests are offered for Biology, Chemistry, Literature in English, Mathematics, Physics, and Psychology.

Graduate Admissions Coordinator Liza Ruano wrote in an email to *The Tech* that the MIT Graduate Admission website, which includes information on application deadlines, degrees offered, application requirements, and standardized testing, has been updated "as departments have made us aware of their GRE policies for the upcoming cycle." Ruano added that "departments also update their individual program websites regarding their application requirements as decisions are made."

Hamsa Balakrishnan, associate head of the Department of Aeronautics and Astronautics, wrote in an email to The Tech that the "decision to no longer accept GRE scores was made independently of the COVID-19 pandemic" and "based on faculty discussions early this year."

Peter Fisher, head of the Physics Department, wrote in an email to *The Tech* that he "will charge the physics department education committee to look into" whether the Physics Department's revised GRE policy will remain after this admissions cycle "during Fall and make recommendations for any changes for" the 2021 academic year.

Educational Testing Service, the organization that administers the GRE, announced Aug. 20 that the September and October GRE Subject Test administrations "have been canceled due to impacts from the pandemic" and that "the next opportunity to take a Subject Test — assuming health conditions improve — will be April 2021."

Community members receive results within 48 hours, usually 24 hours

COVID-19 Testing, from Page 1

waited one and a half hours to get tested on both Aug. 18 and Aug. 25. Several MIT community members posted pictures of and complained about the lines on Twitter.

Wait times averaged 45–60 minutes Aug. 17 and Aug 18. Average wait times decreased to under 15 minutes Aug. 26. Overall, they have averaged 15–20 minutes, Stuopis wrote in an email to *The Tech*.

The long lines were partially due to clumping around certain hours. Udomlumleart said that although lines were 200 patients long the morning of Aug. 18, lines had shortened to 30 patients by that afternoon. Wait times on the MIT Medical Twitter page have also fluctuated from an hour to under 15 minutes. If hundreds of people arrive at once, "it is hard to catch up," Stuopis wrote.

Due to the long wait times, MIT Medical increased from eight hours of testing to 12 each weekday (5 a.m.–5 p.m.), "reengineered the lines," and doubled testing capacity, Stuopis wrote. A page showing wait times was also added to COVID Pass Aug. 24.

Additionally, MIT Medical is hoping for a "do-it-yourself-at-home model." The application for self-swabs was submitted weeks ago and is awaiting Food and Drug Administration (FDA) approval. Unfortunately, there is no timeline for when the FDA will respond to the application, Stuopis wrote.

However, MIT Medical will not implement an appointment system because based on experiences from testing in the spring, "it is far too burdensome to manage properly" and "the no-show rate was incredibly high and that made it difficult to manage our resources," Stuopis wrote.

"To be honest, I am super annoyed that you have to wait for two hours," Udomlumleart said. However, he remains optimistic about the possibility of more testing stations, extended hours, and a better system. MIT Medical is "a small organization, but they seem to learn everything. So I am hopeful."

Ultimately, Stuopis wrote, "the MIT community should be prepared to wait in line to be tested. Given the high volume of testing we are doing and the amount of time it takes to perform a test, waits will be unavoidable when we get surges of people."

MIT community members receive testing results within 48 hours, although 24-hour turnaround times are "common," Stuopis wrote in an email to *The Tech*. Tests are processed by the Broad Institute, which is capable of processing 35,000 tests per day and of increasing testing capacity, Stuopis wrote.

Stuopis expects MIT Medical to test over 10,000 people in the Fall term. As students may cancel housing until Aug. 28, it is unclear exactly how many students and employees will be on campus, Stuopis wrote.

Testing is conducted in a trailer outside of MIT Medical. The trailer is partitioned into two areas, one for check in and one for testing. At check in, Patients scan a barcode from COVID Pass and are asked to confirm their date of birth and phone number for identification. Once identified, patients are handed a labeled sample tube and a sealed swab. Patients then enter the testing area, where they swab themselves at one of six stations, and a staff member moves the sample tube with the swab to a rack. Patients exit to an area with disinfecting supplies.

In a best-case scenario, testing takes two minutes, Stuopis wrote. However, fully sanitizing each swabbing station after each patient is tested takes an additional 75–90 seconds. "Performing a swab is more invasive and takes more time" than a flu immunization, Stuopis wrote, so lines move more slowly than those of flu clinics.

There are generally 12 testers, four check-in staff, and two to four staff standing in line and answering questions, along with management staff. Shifts vary in length as it is difficult to wear PPE for extended periods of time, and some staff also need to care for non-COVID-19 patients, Stuopis wrote.

The trailer has many safety precautions, including floor-to-ceiling plastic partitions the length of the trailer separating staff from patients. Testing bays are fitted with large rubber gloves in the partition so that staff do not physically contact patients. The HVAC system is "specifically to minimize risk of exposure," Stuopis wrote. There are also signs reminding those in lines to wear masks and stay at least six feet apart.

MIT Medical is "confident that the false negative rate [of the tests] is acceptable," Stuopis wrote, especially given that testing occurs multiple times a week, and there are other measures such as Quarantine Week (Aug. 29–Sept. 7), masks, and physical distancing in place.

Daily testing statistics are available at *medical.mit.edu/CovidTestingResults*.

New Title IX policy will include cross-examination during live hearings as required by ED regulations effective Aug. 14

Policy includes more legalistic procedures, stricter sexual misconduct definition than MIT's pre-existing policy

By Kristina Chen
EDITOR IN CHIEF

This article was published online on August 19, 2020.

MIT has released a new Title IX Sexual Harassment policy in response to new regulations from the Department of Education (ED), effective Aug. 14.

The new procedure, in compliance with federal regulations, requires that formal Title IX complaints be addressed in a live hearing, chaired by outside legal professionals and including cross-examinations of the complainant, respondent, and witnesses. Statements of parties or witnesses who do not submit to cross-examination may not be relied on by the hearing panel.

Vice President for Human Resources Ramona Allen, Chancellor Cynthia Barnhart PhD '88, and Provost Martin Schmidt '88 wrote in an email to the MIT community that the new policy is in line with the ED's "more narrow definition of sexual harassment." Behaviors in violation of MIT's sexual harassment policy that do not fit into the ED's definition will continue to be addressed through MIT's pre-existing procedures.

Allen, Barnhart, and Schmidt also wrote that legal professionals will "make evidentiary rulings during cross-examination" and help write a "detailed determination letter required by the regulations."

MIT's pre-existing procedures for hearings do not include cross-examination and are chaired by members of the Committee on Discipline's sexual misconduct subcommittee, without the involvement of outside professionals.

Jackie Valeri G, chair of the messaging and partnerships branch of the Title IX Student Advisory Committee (TIXSAC), said in an interview with The Tech that the old system will be kept so that "not all cases at MIT go through this stricter system" with "a judge-like figure" and where "people are required to have advisors provided to them by the school to conduct cross examination during the hearing."

Molly Bird G, member of the committee tasked with reviewing the Institute's policies and TIXSAC member, said in an interview with The Tech that the new, more legalistic procedure may "scare people away from reporting, so we want to keep the current process, which, in theory has lower barrier to entry."

The new regulations apply to cases of sexual misconduct categorized under Title IX Sexual Harassment. The Institute Discrimination and Harassment Response (IDHR) office's website describes these as cases where an MIT employee "conditions the provision of an aid, benefit, or service of MIT on" participation "in unwelcome sexual conduct"; where unwelcome conduct is considered "to be so severe, pervasive, and objectively offensive that if effectively denies a person equal access to MIT's education"; or where sexual assault, dating violence, domestic violence, or stalking take place as defined by federal law.

Additionally, the conduct must occur in an education program or activity controlled by MIT and must take place in the U.S. When filing the formal complaint, the complainant must be participating in activity at MIT.

Secretary of Education Betsy DeVos passed the new regulations in May, and the ED required universities to update their policies by Aug. 14 to comply with federal law. At the time, the Institute charged a committee chaired by Professor Andrew Whittle ScD '87 and Professor Munther Dahleh to advise the creation of new policies.

Bird said that these policies are interim measures following the regulations and that the "plan is to keep evaluating our policies."

Bianca Lepe G, member of the committee and TIXSAC member, said in an interview with The Tech that there are lawsuits against the ED around the new regulations and that it is possible they will affect the policies in the upcoming semester.

The regulations were criticized by advocacy groups, including the National Women's Law Center and the American Civil Liberties Union, for their strict definition of sexual harassment, legalistic requirements, and requirement of cross-examination during hearings.

Valeri said that "even though the regulations have changed, there's nothing too small to go to IDHR for, and there's a lot of informal remedies that IDHR can provide." Lepe added that IDHR does not "move forward on any trajectory unless the student agrees."

MIT enters Phase 2, the 'cautious' phase, of reopening campus

Campus access expands, regular testing commences, outdoor spaces are regulated, and staff policies change

By Edwin Song
ASSOCIATE NEWS EDITOR

This article was published online on August 19, 2020.

MIT entered Phase 2 of its ramp-up of on-campus operations Aug. 12, according to an email to the MIT community from Chancellor Cynthia Barnhart PhD '88, Provost Martin Schmidt PhD '88, and Vice President for Research Maria Zuber.

Phase 2 expands campus access for researchers, instructors, and graduate students, initiates regular testing for community members accessing campus buildings, and regulates the use of "outdoor campus space," Barnhart, Schmidt, and Zuber wrote.

Phase 2 allows departments, labs, and centers to "initiate partial access to campus offices and teaching laboratories" for "faculty, researchers, instructional staff, and graduate students whose research and/or instructional activities require that access." Access is capped at 50% capacity, which the email defines as "office access equal to 50% of the normal on-campus hours available to their faculty, staff, and grad students."

MIT has also initiated regular COVID-19 testing for "everyone who accesses campus." Compliance with testing requirements is mandatory for maintaining campus access, the email wrote. MIT community members accessing campus can view their testing requirements on the COVID Pass app for daily health attestations.

All individuals on campus who are already enrolled in the COVID Pass system will receive a "baseline test" by Aug. 20. Students who come to campus this fall will be tested upon arrival. Subsequently, MIT community members on campus four or more days a week, including individuals living in residence halls, will be tested "at least twice weekly"; MIT community members on campus one to three days a week will be tested at least weekly; and those on campus less frequently must have "a test on file within the past 7 days" before gaining campus access.

The email wrote that the testing protocol will be regularly evaluated and may be subject to change.

MIT is also limiting access to "outdoor campus space" to "those enrolled in MIT safety protocols, including MIT Medical testing and Covid Access/Covid Pass, with a maximum group size of 25 persons," the email wrote.

President L. Rafael Reif, Schmidt, and Vice President for Human Resources Ramona Allen sent letters to MIT staff Aug. 11 detailing updates to on-campus work requirements and COVID-19-related pay and benefits policies.`

Reif wrote that although "every MIT staff member who can work successfully from home will need to continue doing so, at least until the beginning of January 2021," most staff members with on-campus duties must return to work in person on campus by Aug. 31.

Reif wrote that the move to bring more staff back to campus is "in line with Governor Baker's guidelines for [Massachusetts'] Phase 3 reopening."

Schmidt and Allen wrote that the "special pandemic-related pay policies" established mid-March, including a pay premium for staff working on-campus, expire after Aug. 30.

Schmidt and Allen wrote that MIT "may no longer be able to continue to provide" the "full usual pay" for "staff members whose work has been eliminated or reduced as a result of the pandemic" or those "who are unable to do their work because of family responsibilities." They added that these staff members "will be placed on unpaid leave."

MIT has established a one-time childcare subsidy of $2,000 per child under 12 for up to three children for benefits-eligible staff members and postdoctoral researchers. The application for the subsidy is available on the Human Resources website.

Schmidt and Allen also encourage benefits-eligible staff members and postdoctoral researchers "experiencing financial distress" or "unable to cover immediate, essential expenses due to additional costs or loss of income during the pandemic" to apply to the MIT Staff Emergency Hardship Fund, which may "provide one-time support of up to $1,000."

MIT will also extend free on-campus parking for anyone with an MIT ID until Dec. 31, Schmidt and Allen wrote.

Phase 2 of MIT's reopening, termed the "cautious" phase, is the third of five phases of resuming on-campus operations, according to a chart linked in Barnhart, Schmidt, and Zuber's email.

In Phase 0, which began in mid-March, only "essential personnel" including faculty and staff "supporting students in emergency housing or critical building and research operations" were approved for campus access.

In Phase 1, which began June 15, graduate students, research staff, and faculty requiring laboratory access were invited on campus, with an "anticipated gradual increase in campus population density and on-campus hours over time."

In Phase 3, the "vigilant" phase, campus access will be expanded to undergraduate campus residents, graduate students, on-campus instructors, and Student Support Services staff.

In Phase 4, the "new normal" phase, "all other administrative and non-research staff" will be invited to campus.

During Phases 0, 1, 2, and 3, several protective measures have been in place, including mandatory face masks, physical distancing, hand hygiene, testing, contract tracing, daily health attestations, limited building access points, "isolation and quarantine plans," "remote working when possible," "online teaching and learning when possible," and "policies limiting campus visitor access, MIT-approved travel, and events."

According to the chart, Phase 4 will be implemented when there is a COVID-19 vaccine, therapeutics, or herd immunity.

FSILGs to implement new recruitment measures Fall 2020

IFC postpones formal recruitment to spring; Panhel to proceed with completely virtual recruitment in fall

By Shelley Choi
ASSOCIATE NEWS EDITOR

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MIT fraternities, sororities, and independent living groups (FSILGs) will implement new recruitment procedures for the 2020–2021 academic year. The Interfraternity Council (IFC) will postpone formal recruitment until spring while the Panhellenic Association (Panhel) will hold virtual recruitment in the fall.

All FSILGs will be closed to undergraduate residents for the fall in accordance with MIT's COVID-19 regulations.

IFC President Nicolas Salinas '21 wrote in an email to The Tech that the IFC decided to postpone the formal recruitment period until Spring 2021. Formal bids from all IFC chapters will also be deferred. The decision comes after polling the IFC community and finding that "a majority of the community preferred to wait for the Spring to do rush," Salinas wrote.

Salinas added that the IFC hopes that more students will be able to interact with IFC members in the spring to "facilitate a more engaging recruitment process." However, virtual bidding will take place if students are not permitted to return to campus by that time.

The IFC will host virtual "Rush Circles" in the fall to "introduce First Year students to members of our chapters that can give a fair and objective overview of what it's like to be a part of a fraternity at MIT," the IFC Recruitment webpage for the Class of 2024 writes.

Each Rush Circle will be led by "two active IFC members, known as Rush Circle Captains," to keep "first years engaged throughout the Fall semester," Salinas wrote.

According to the IFC website, Rush Circle meetings will take place during the first three Saturdays of September. Each day will open and close with a "group discussion with each Rush Circle and the Rush Circle Captains," Salinas wrote. On each day, IFC chapters will have "30 minutes to give a presentation."

Salinas wrote that following the Rush Circle meetings, each chapter will have informal rush events throughout the fall. A complete timeline of events for the IFC recruitment process can be found on their website.

Unaffiliated MIT students can register for IFC Rush Circles through an online form. The form requires students to indicate which types of fraternities they are interested in and what they hope to gain from a fraternity or sorority.

Panhel will proceed with a completely virtual fall recruitment. Panhel Vice President of Recruitment Ashley Pearson '21 wrote in an email to The Tech that Panhel believes it has an "invaluable support and empowerment network" and that individuals interested in joining "should have the opportunity" to do so in the fall. Pearson wrote that she relied on her own sorority community to "help cope with all the hardships that came with quarantine and 2020."

Pearson added that Panhel recognized that not all students may be able to return to campus in the spring, so virtual fall recruitment would be more "inclusive."

Primary Recruitment will "occur entirely virtually" over the first three weekends of September, Pearson wrote. "To ensure flexibility with different time zones, potential new members will be able to schedule their own recruitment events, with help from their Panhellenic Recruitment Counselors." Panhel will also "increase financial transparency and have a dedicated part of recruitment to talk about financial obligations and support options."

Panhel will also host Continuous Open Recruitment (COR) starting Sept. 21. Pearson wrote that COR "has occurred every semester," and the participating sororities "vary each semester." This fall, COR may include "coffee chats" and other virtual events throughout the semester, according to the Panhel website.

Pearson wrote that despite the logistical challenges of having virtual recruitment, the Panhel chapters have been "hard at work" planning "fun and engaging" events to make Zoom calls "more enjoyable." Panhel is also holding virtual events such as the Aug. 9 Women's+ Activities Fair "in collaboration with other women+ support groups on campus" including the Society of Women Engineers and the Black Women's Alliance. Additional event information can be found on the MIT Panhel Instagram.

Students interested in Panhel recruitment can fill out an online form.

The MIT Living Group Council (LGC) website writes that each Independent Living Group has a different rush system, with some hosting events at the same time as fraternity or sorority rush while others practice informal rush to recruit members throughout the semester.

Sharon Lin '21, pika rush chair, wrote in an email to The Tech that pika will not be actively looking for residents in the fall, as the house is not open to undergraduates this fall. However, pika will still hold "rush in order to make the new class aware" of the house, Lin wrote, adding that pika's priority this fall is to "foster intentional community" that will carry on until members are allowed to move into the house.

Lin wrote that planned rush activities include "knitting sessions, music jams, conversations with house members, and group cooking lessons." The house will also be active on Discord, an multi-purpose communication platform.

Though no formal process exists, students should contact individual Independent Living Groups if interested in joining.

Undergraduates abroad Fall 2020 will not be paid for hourly wage jobs

This brief was published online on August 19, 2020.

MIT will not offer hourly wage jobs — including paid UROPs, TAships, or grader roles — to undergraduates living outside the U.S. this fall. However, most graduate students living abroad will continue with their paid remote appointments, Vice Chancellor Ian Waitz wrote in an email to students and faculty Aug. 14.

Waitz wrote that MIT can only pay undergraduates living abroad by stipend and not hourly wages due to "international tax and compliance issues."

Undergraduates may earn up to $1,900 by stipend in the upcoming academic year through experiential learning opportunities (ELO) including research, entrepreneurship, K-12 teaching, and public service. The ELO stipend was created to offset families' financial difficulties due to COVID-19, President L. Rafael Reif announced in an email to students July 7.

Undergraduates living abroad may still apply for credit-only UROPs for the fall.

The "vast majority" of graduate students abroad will proceed with their fellowships, TA, or RA appointments as planned, Waitz wrote. However, some TA or RAships may be converted to non-service fellowships according to the country the student is living in, the student's research area, or "export control requirements." Funds for non-service fellowships, which do not require students to hold TA or RA responsibilities, will be identified by departments, schools, or the Provost's office.

Credit-only UROPs, ELOs, and graduate appointments for students abroad will be approved through "the same general process" used for remote international appointments this summer, Waitz wrote.

Students must satisfy several eligibility criteria, including "good academic standing," supervisor approval for the remote appointment, active U.S. visa status prior to leaving the U.S., and inability to return to campus due to COVID-19 government restrictions or campus access restrictions, the MIT Team 2020 website writes.

Eligible students must submit an intake form and a review group will decide whether to approve each appointment. The website writes that MIT aims "to facilitate as many remote international appointments as possible."

Waitz wrote that MIT has approved about 296 graduate and 113 undergraduate student appointments since May.

—Kerri Lu

Fall Emergency Academic Regulations discourage the use of third-party online proctoring software, high-stakes exams

Instructors will be required to provide students with 'statement of required work' and schedule alternate exam times to accommodate students; finals are to be taken within 24 hours of scheduled exam time

By Kerri Lu and Grace Song
STAFF REPORTERS

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The Academic Policy and Regulations Team (APART) released its Fall 2020 Emergency Academic Regulations (EAR) Aug. 10. Instructors must provide students with a "statement of required work" early in the semester and schedule alternate times for midterms and final exams to accommodate students in different time zones. Instructors are also encouraged to "de-emphasize" final exams and discouraged from using third-party online proctoring.

General regulations

According to the regulations, the "statement of required work" must contain a list of assignments, an "approximate" schedule with test dates and deadlines, final examination information, and grading criteria. For undergraduate subjects, the statement is due by the end of the first week of class.

All instructors must provide a "precise schedule" by the end of the third week for full-term subjects or by the end of the second week for half-term subjects.

Undergraduate and graduate subjects with required in-person components must arrange a remote alternative for students living off campus, the regulations state.

Instructors of lecture-based subjects with "live," or "synchronous," sections should "strongly consider" video recording lectures for students to "access 'asynchronously' at any time." However, instructors of classes with significant "interaction with or among student members" may "choose not to provide a recording" to promote participation during live discussions.

Registering for multiple subjects with simultaneous sections "may be more common during the Fall 2020 semester with many subjects providing asynchronous lectures," the regulations write. Advisors are encouraged to evaluate and discuss these registrations on a case-by-case basis with advisees.

Instructors of classes with in-person elements must develop contingency plans detailing how the class will proceed under the case of disruption during the semester. Disruptions may include an instructor or TA testing positive for COVID-19; students being "required to quarantine because they were in contact with someone who tested positive for COVID-19"; and "health conditions in the greater Boston area" deteriorating with Massachusetts ordering that MIT "discontinue in-person instruction." Remote classes are encouraged to also develop contingency plans "in the event that the instructor becomes ill" and unable to teach.

Students are encouraged to continue using Student Support Services and Gradsupport when making academic requests, the regulations write. Instructors are advised to be "flexible" with these requests and "work with students disadvantaged in completing work due to their home situation."

Exams and activities

The regulations state that instructors must provide at least one alternative time for midterm exams within 24 hours of scheduled exam times to accommodate students in different time zones or with "uncertain internet connections or problematic home environments." For online midterms, instructors should be accommodating with "the time needed for submission" and "take into account students granted extended time due to disabilities," the regulations write.

Instructors are "strongly encouraged to avoid" scheduling exams or major assignment deadlines on Election Day Nov. 3 or the following day.

Subjects that schedule activities outside of regular class time must request an exception from the Chair of the Faculty. Students who cannot attend the activities due to another regularly scheduled class "must be accommodated," the regulations state.

For subjects with final exams, no assignments may be due and no tests may be held after Dec. 4. For subjects without final exams, the final assignment must be due before 10 p.m. EST Dec. 9.

"Instructors are encouraged to de-emphasize high-stakes end-of-term methods of assessment such as final exams," the regulations write.

Instructors must provide at least one alternative time for students to take the final exam within 24 hours of the scheduled exam time. Instructors must announce the format of their final — open or closed book — by drop date Nov. 18.

Thesis and dissertation defenses will be conducted remotely. Students must submit an electronic copy rather than a hard copy of their thesis or dissertation to the MIT Libraries.

Proctoring software

Instructors are discouraged from utilizing "third-party online proctoring for midterm or final exams unless all other options have been exhausted," the regulations write. Instructors who wish to use Proctortrack or other third-party proctoring software must request approval from the Chair of the Faculty by Sept. 1. Instructors approved to use third-party online proctoring must indicate the use of the software in the statement of required work.

APART's stance against third-party proctoring software comes after MIT required incoming first years to install Proctortrack software before taking the first-year math diagnostic and Advanced Standing Exams early August.

APART chair Rick Danheiser wrote in an email to *The Tech* that "APART shares the concerns expressed by many students" about the use of third-party proctoring software.

Over 650 individuals signed a student petition to ban the use of Proctortrack at MIT. The petition describes Proctortrack as "spyware" and cites the possibility that the software could be hacked. "We have no idea who works for ProctorTrack [sic] and who there can access our private files," the petition writes, urging students to "stand up against this extreme invasion of privacy."

The petition also suggests that instructors could proctor students through Zoom or replace exams with other assignments to address cheating.

The Undergraduate Association (UA) Committee on COVID-19 and Student Information Processing Board released a report the week of Aug. 8 recommending that proctoring services be "avoided at all costs" and that procedures on reviewing and using them "be codified in EARs rather than general recommendations."

Following the regulations' release, the UA Committee on COVID-19 (UA COVID-19) and Graduate Student Council (GSC) Academic Policy Student Solutions Group (SSG) wrote in an email to *The Tech* that they "especially want to continue addressing the use of third-party proctoring services."

"We plan to continue conversations with relevant faculty and staff members about how MIT students' data are being used and what other guidelines or guidance can be put in place to ensure that these services are used only when absolutely needed and in the safest way possible," they wrote.

UA and GSC Recommendations

The UA COVID-19 and GSC SSG released a joint recommendations report on Emergency Academic Regulations July 31.

Prateek Kalakuntla '21 and Tam Nguyen '21 led the UA COVID-19 Academics Subcommittee, and Rebecca Black G led the GSC SSG Academic Policy Subgroup for the creation of the report.

UA COVID-19 and GSC SSG wrote in an email to *The Tech* that ideas for the Committee's Preliminary Report to APART on Academic Support "came directly from undergraduate students through the UG Academic Support Forum" July 15.

"Outside student input was, and always is, key to our process," they wrote.

Discussions between UA COVID-19 and faculty "made clear that APART would be most receptive to our recommendations in the form of values and outcomes we hope to see reflected in the EARs, as opposed to explicit policies." After defining these values, they were then "integrated with a separate report" by the GSG SSG based on "internal discussions and feedback" collected from graduate students at GSG General Council meetings.

The recommendations are organized under five headings: "Flexibility in Policies," "Setting Clear Expectations," "Reasonable Workloads," "Compassion for Personal Concerns," and "Considerations for Teaching Assistants."

The first section, Flexibility in Policies, concerns the "learning disadvantage faced by students who [do not] live on the East Coast," the report writes. The recommendations address issues about "tests being scheduled at unreasonable times, classes occurring late at night or early in the morning, and difficulties assessing TAs/LAs."

The Setting Clear Expectations section addresses how classes can promote "successful communications, accountability, and student empowerment" by setting "unambiguous expectations for students, instructors, and TAs."

The Reasonable Workloads section contains recommendations for how syllabus adjustments, exemption policies, and grading are made.

The Compassion for Personal Concerns section addresses scheduling, student wellness, submitting and presenting theses, and the use of proctoring services.

Expectations for TA compensation and working conditions are highlighted in the Considerations for Teaching Assistants section. The report recommends that TA-graded exams be "normalised" between TAs. UA COVID-19 and GSC SSG wrote that this could be accomplished by normalizing "the average or median grades between TAs," so one is not a "'harder grader' than others."

The report also proposes extending the MIT hotline to cover TA "difficulties with instructors" and Principal Investigators.

The UA COVID-19 and GSC SSG wrote that their recommendations "were written to explicitly highlight the hotline as a way to report either [TAs'] instructors or PIs coercing them to teach in-person if they are not comfortable, as these topics have generally not been discussed in the context of the hotline."

Undergraduates may report academic policy violations to the UA Committee on Education via an online form. Graduate students may report violations to *gsc-ssg-academic-policy@mit.edu* or via an anonymous form. For other concerns, undergraduates may email *ua-covid19@mit.edu* or fill out the UA COVID-19 response feedback form, and graduate students may email *gsc@mit.edu* or fill out the GSC topic suggestion form.

MIT remains the only QuestBridge partner with non-binding admissions process and has 'no plans to change' its policies

Over 100 undergraduates sign QuestBridge scholars' petition requesting that MIT continue non-binding policy

By Kristina Chen
EDITOR IN CHIEF

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MIT is now the only QuestBridge partner with non-binding admission through QuestBridge's College Match. Dean of Admissions Stu Schmill '86 wrote in an email to *The Tech* that the admissions office has "no plans to change" this policy.

For all QuestBridge partners but MIT, students are required to attend their match school. Students who are matched to MIT may apply to other schools regular decision. The other three schools that had non-binding policies last year — Princeton, Stanford, and Yale — recently changed their policies to be binding.

Princeton University spokesperson Michael Hotchkiss told *The Daily Princetonian* that the non-binding policy differed from most QuestBridge schools, citing that the change allows Princeton's policy to be "consistent with most other QuestBridge partners and the original design of the National College Match program."

Schmill wrote that MIT first implemented a non-binding policy because "committing to a college in the fall of their senior year is too soon" for many students, especially low-income students who have less access to knowledge about the college admissions process and may not have been able to visit schools.

MIT QuestBridge scholars wrote a petition signed by over 100 undergraduates and alumni requesting that MIT continue its non-binding admissions policy. The petition writes that many QuestBridge scholars "would have never applied to MIT if there was a binding admissions policy."

Mohit Dighamber '23, president of MIT's QuestBridge chapter, said in an interview with *The Tech* that it is important for first generation and low income students to "have that extra time to go to admissions events" such as Campus Preview Weekend and receive more information before making "a life-changing decision."

QuestBridge scholar Eleane Lema '21 said in an interview with *The Tech* that the non-binding policy is more similar to the normal college admissions process because it "equalizes and gives low income students the same flexibility" to choose whether or not they want to attend a particular school.

QuestBridge's National College Match program matches low-income students to 42 U.S. colleges by partnering with the schools "to identify and support students who otherwise may not apply to leading colleges," the QuestBridge website writes.

The match program's application is separate from colleges' usual application portals, such as MyMIT and the Common App. The QuestBridge process allows students to apply early, by November, to several colleges using a single application with additional supplements varying by school.

QuestBridge student finalists rank up to 12 QuestBridge partners through the program and are matched to at most one school Dec. 1. If matched, a student receives a full four-year Match Scholarship from the school.

According to Schmill, MIT typically admits 10 students annually through the National College Match program, and "most, but not all," of those students choose to attend MIT. From the entire QuestBridge program, MIT enrolls about 90 students each year.

First-Year Orientation, Pre-Orientation Programs virtualized

Full schedule of orientation events is accessible via Guidebook app, 22 FPOPs are set to run remotely

By Wenbo Wu
NEWS EDITOR

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First-Year Orientation will be held Aug. 23–28 and First-Year Pre-Orientation Programs (FPOP) will be held the week of Aug. 17. All events will be virtual.

A schedule of all orientation events is available in an MIT guide on the Guidebook app.

First-Year Orientation

Director of First Year Advising and Programming Elizabeth Young wrote in an email to *The Tech* that orientation will resemble MIT's "traditional schedule." A "Kickoff event" will be held Aug. 23, followed by five mandatory meetings between students and their Orientation Leaders (OL) in small groups throughout the week. The small group meetings "will be scheduled by the OL on the first day of Orientation" to "accommodate students in different time zones," Young wrote.

Young also wrote that Vice Chancellor Ian Waitz will host a mandatory Academics @ MIT event Aug. 24. Additionally, incoming first years will "meet with their first year advisor throughout the week to discuss academic options" and register for classes.

Attendance for the Orientation Kickoff, Academics @ MIT, and Aug. 28 Orientation Closing events, as well as the first year advisor and OL small group meetings throughout the week, is mandatory for incoming first years, Young wrote.

Young wrote that incoming first years can also elect from "a large number of events" to attend on Zoom, including "information sessions from departments," "lab tours," and "panel-type Q&A sessions with [Fraternities, Sororities, and Independent Living Groups] and the Fall Career Fair planning committee." Additionally, students may attend events hosted on an "internal class-wide Slack workspace."

Young wrote that OL applicants "were interviewed in small groups in early March." Two "Logistics Coordinators" and 93 OLs were chosen from a "large" and "competitive" applicant pool, Young wrote.

Logistics Coordinators are "returning OLs who support the Office of the First Year [OFY] staff to plan and execute Orientation," Young wrote, adding that the 12 of the OLs serving as "Captains" also played an important role in planning orientation.

Young wrote that having 93 OLs allows for small OL groups consisting "of 11-13 incoming students."

OL groups were sorted into larger color teams for a virtual version of the "Color Flag Competition" usually held during orientation. Richard Colwell '21, one of the OL captains, wrote that the competition began in June and continued throughout the summer this year because OL engagement with their teams began "earlier than usual."

Competition events have included "various photo challenges for students to complete on a weekly basis with points being awarded to teams... based on weighted participation in these challenges," Colwell wrote. Point values range from one to 12.

Colwell added that the competition has included easy challenges such as a "homemade meal," medium challenges such as a "funky hairstyle," hard challenges such as "designing a flag for your team," and Zoom challenges such as making "a heart with your teammates."

Color flag teams have socialized through various Slack channels and approximately monthly game nights, Colwell wrote. Some OL captains have also held "'office hours'" for students to discuss "anything pertaining to MIT."

According to the competition results website, the overall team scores range from 18 to 99 points as of press time. Three of the 12 color teams participated in the current week's challenges.

Chelsea Truesdell, assistant dean of advising and new student programming, wrote in an email to *The Tech* that she estimates "50% of the class has participated in the Flag Competition" while "over 95%" of first years have engaged on Slack.

FPOPs

Young wrote that 22 FPOPs are running remotely this year.

Six FPOPs offered in previous years elected not to participate in 2020, Young wrote. These FPOPs include the First-Year Outdoors Program (which involved kayaking in Boston Harbor), two Discover Earth, Atmospheric, and Planetary Sciences programs (which involved visiting Yellowstone, which is currently closed, or Mt. Washington Observatory), and Discover PreHealth (which involved visiting local hospitals and doctors, who currently do not allow outside guests).

The OFY FPOP webpage writes that although applications for FPOPs with limited spots closed July 24, certain FPOPs will offer "modified virtual programming open to any interested student" and "do not require application."

According to the guidebook, FPOPs that do not require application include Discover Materials Science and Engineering, Discover Brain and Cognitive Sciences, First Year Leadership Experience, Discover UROP, and Discover Aerospace.

Young wrote that the open FPOPs allow students "to drop in" whenever the FPOPs are hosting an event, permitting "students to engage in multiple programs, which has never been done before."

"Approximately half of the incoming class will participate in an FPOP and although all programs are remote, we have still matched our historical participant numbers," Young wrote, adding that 616 students will participate in the application based programs, "ranging in size from 14-70" students per program.

The process for registering new FPOPs has not changed due to COVID-19, although no new FPOPs were created for this year, Young wrote.

Young wrote that the process of implementing a new FPOP takes one "full year of planning." Groups and departments begin "by assessing interest for this program." Then, they determine how to fill four to five days with "8+ hours per day of program content" and determine the cost of the FPOP, "supplemented by participant fees" or "supported by their group [or] department." Groups or departments interested in creating a new FPOP should meet with Taylor Pons, staff associate for advising and new student programming for the OFY.

MIT presents reopening plans at Cambridge City Council committee meeting

This article was published online on August 12, 2020.

MIT presented its fall reopening plans to the Cambridge City Council's Economic Development and University Relations Committee Aug. 11. MIT Office of Government and Community Relations Co-Director Sarah Gallop, MIT Medical Director Cecilia Stuopis '90, and MIT Emergency Management Director Suzanne Blake spoke at the meeting.

Gallop described MIT's plans as "cautious and conservative" and "aligned with guidance" from the Centers for Disease Control and Prevention. She said that about 2,600 graduate and undergraduate students will be living on campus in the fall.

Stuopis said that campus risk management strategies include limiting campus density, mandatory daily health attestations, regular testing, and contact tracing.

The health attestations require individuals on campus to report symptoms and agree to comply with physical distancing and face covering guidelines.

The health attestation app was developed at MIT and "is linked to an individual's MIT ID card, which then allows us to potentially control access to buildings for people who report symptoms, or who are not compliant," Stuopis said. The app can also notify MIT Medical if anyone has positive responses to the health screening questionnaire.

Stuopis also said that community members on campus will be required to test for COVID-19 twice weekly. Those who develop symptoms will be tested via an "alternative pathway" separate from asymptomatic individuals.

Stuopis said that MIT Medical currently has "no plans for digital contact tracing." MIT Medical will instead perform "case investigation" once an individual with a positive test is identified.

Blake described MIT's emergency management plan. She said that if MIT does "have to ramp down again, it will be very methodical and very planned out." MIT has two types of ramp down plans: localized, within a location or activity, or campus-wide, in multiple phases and sectors.

MIT's "triggers for action" for ramp-down include negative trends in Massachusetts public health, increased transmission within Cambridge, community transmission on campus, death on campus due to COVID-19, and any infection rate that impacts essential operations, Blake said.

Harvard and Lesley University also presented their fall plans at the meeting.

—Kristina Chen

87 first-year students choose to take gap year for 2020–2021

No students to be taken off Class of 2024 waitlist due to 'higher than expected' number of accepted offers

By Wenbo Wu
NEWS EDITOR

This article was published online on August 6, 2020.

Dean of Admissions Stu Schmill '86 wrote in an email to *The Tech* that 87 first-year students chose to defer their admission until the next academic year.

Schmill wrote on the MIT Admissions Blogs July 30 that "fewer first-year students chose to defer their admission than anticipated" despite having to learn remotely for the fall semester. As a result, MIT does not "have any space in the class" for students on the Class of 2024 waitlist.

"Typically, between 10 and 15 students will defer in a given year," Schmill wrote in the email, but given the "higher than expected number of admitted students" who chose to accept their offers of admission, the Class of 2024 will end up being of "similar size to other classes."

Vice Chancellor Ian Waitz said during an Aug. 3 call with administrators that about 1,080 first year students will enroll this fall, which is "pretty close to our typical class size of 1,100." The eight percent deferral rate by first years is "lower than many of [MIT's] peers who are inviting first-years back," Waitz said, noting that MIT Admissions "over-admitted a bit given uncertainty about how the online CPW would work."

"I want to express my thanks for your patience, and my apologies for having kept you waiting so long as we tried to do the right thing," Schmill wrote to waitlisted students in the blog post. "We might be so fortunate as to see you at MIT in the future, perhaps as a graduate student, faculty or staff member, or a friend of the MIT community."

MIT announced March 14 that it had accepted 1,457 students into the Class of 2024 from the initial pool of 20,075 applicants, making for a 7.3% admission rate overall.

About 900 undergraduates will live on campus in Fall 2020

208 of 232 first year, sophomore, junior requests to live on campus have been approved through SHARP

By Grace Song
STAFF REPORTER

This article was published online on August 6, 2020.

Approximately 900 undergraduates — about 700 seniors and 200 first years, sophomores, and juniors — plan to live on campus in the fall. All undergraduate dorms except Burton-Conner will be open in the fall.

MIT Housing and Residential Services (HRS) released Fall 2020 building assignments July 30.

HRS Communications Manager Zachary Tsetsos wrote in an email to *The Tech* that the "approximately 700 seniors who applied for housing" were all given on-campus building assignments. The 208 first years, sophomores, and juniors approved to live on campus through the Student Housing Assistance Review Process (SHARP) have also received building assignments.

According to the SHARP website, 290 students applied to SHARP: 232 first years, sophomores, and juniors who wished to live on-campus this fall, and 58 "students, including seniors, who are experiencing significant hardship" and "believe they absolutely cannot live at home [or] on campus." The SHARP application closed July 28.

Of the 232 requests for on-campus housing, 208 were approved. Four of those students acquired approval through appeal.

Of the students approved through SHARP, 11% were first-years, 44% were sophomores, and 45% were juniors, according to a SHARP presentation emailed to *The Tech* from Division of Student Life Senior Associate Dean David Randall.

24 students, including 12 incoming first years, "did not meet" SHARP guidelines and were denied, according to the presentation. Among the denied students were six incoming international students who are unable to travel to the U.S. due to new visa rules.

Eligibility criteria outlined on SHARP's website include "students currently in short-term arrangements or on-campus emergency housing who cannot return home due to travel restrictions, circumstances in their home state/country, or circumstances of their home life"; "students who have home environments that significantly impair remote learning"; and "students who have no other place to live or for whom being at home would be unsafe given the circumstances of their country or home life."

Incoming first year students were not considered for on-campus housing "except in cases of significant hardship," according to the website.

Students approved to live on-campus through SHARP will have their financial aid adjusted to reflect on-campus housing and dining rates.

The other 58 requests for SHARP assistance were off-campus hardship requests. Randall wrote in an email to *The Tech* that SHARP is "still working on these requests" and "are in direct touch with each student."

"In many cases, we are consulting with Student Financial Services or Disability Access Services so that we can arrive at personalized solutions that best address the unique circumstances of each student," Randall wrote.

Students who plan to live on campus were given the option to form groups with up to five other students. Groups will be ensured assignment to the same residence hall; group requests are separate from the residential "pods" that will be implemented within residence halls. Tsetsos wrote that 698 students requested group selection and formed 167 groups.

"While we are operating at a significantly lower density this fall, we are able to accommodate all students approved to be on campus" among the nine residence halls "that will be operating for the fall semester," Tsetsos wrote.

DSL releases fall semester on-campus COVID-19 policies

Undergraduate residential pod program to be implemented, following UA COVID-19 recommendations

By Kerri Lu
NEWS EDITOR

This article was published online on August 6, 2020.

The Division of Student Life (DSL) released Fall 2020 COVID-19 policies for on-campus undergraduate and graduate students July 24.

Housing

The policies write that "an undergraduate residential pod program is in development in cooperation with student leaders" in the Undergraduate Association (UA) and Dormitory Council. An FAQ on the DSL website writes that pods will allow groups of up to six students in the same residence hall "to socialize in certain settings that do not require 6 feet physical distancing" or face coverings.

Undergraduate and graduate residence halls will not allow daytime and overnight visitors from other residence halls or outside MIT. Fraternities, sororities, and independent living groups (FSILGs) will be closed in the fall and will not allow visitors, the policies write.

However, graduate students may request guest exceptions for "pre-approved friends or family members who are helping residents move to an off-campus location" or childcare and healthcare" providers who come to "Eastgate or Westgate apartments during working hours."

Students may enter their residence hall or other campus buildings by tapping their MIT ID card, and they are responsible for ensuring visitors do not follow them into these buildings. Students are required to have their ID with them when leaving their residence hall. ID sharing is prohibited.

Students are required to keep their residential space clean and practice hygiene, including frequent hand washing and the use of hand sanitizer.

Social events and parties in residence halls and FSILGs are prohibited.

Dining

Students may only dine in their residence hall for dinner and brunch and the Stratton Student Center for breakfast and lunch, according to the Student and Resident Campus Agreement.

Floor kitchens in undergraduate residence halls are closed. Residents may request permission to use a country kitchen for special events, the COVID-19 policies write.

Floor kitchens in graduate residence halls will be "restricted to posted capacities" and "may only be used by those students who do not have their own in-unit kitchens."

Students must clean the kitchens after use.

Common areas

Groups of up to six students may gather in "open indoor common spaces" such as residence hall lounges while following physical distancing guidelines.

Students may also reserve "enclosed common spaces," defined as common spaces with a door. In undergraduate residence halls, enclosed common spaces may only be used by individual pods. In graduate residence halls, enclosed common spaces may be used by groups of up to six students. Residents must clean common spaces after use.

Face coverings are required in common areas, in public spaces on campus, and around other people. Residence halls will provide students with face coverings upon check-in. Students unable to wear a face covering due to a health condition may request an accommodation through the Disability and Access Services Office.

Access to some campus buildings will be limited "via designated entrances and exits, scanning of the MIT ID at designated access points, and signing in and out when reporting to or leaving campus buildings." Students are encouraged to use stairs instead of elevators whenever possible.

Students may socialize in outdoor spaces on campus, such as residence hall courtyards, while following physical distancing guidelines.

Playgrounds in graduate residential communities will be open to members of the residential community. Physical distancing practices will be required for all playground visitors.

Students are required to maintain six feet of physical distancing when using laundry rooms.

Health monitoring

Students who will live on campus Fall 2020 were required to complete an online education module about COVID-19.

Upon returning to campus, students will be tested twice for COVID-19 by MIT Medical. Students will self-quarantine until a second test, taken a week after the first, comes back negative, the policies write.

Throughout the fall, students will be required to complete a daily "health attestation" and health screening questionnaire through the COVID Pass app to confirm that they do not have COVID-19 symptoms, have not tested positive for COVID-19, and have not recently been in close contact with an infected person.

Students who exhibit COVID-19 symptoms, test positive for COVID-19, or come into close contact with an infected person are required to contact MIT Medical immediately and "await further instructions."

MIT may perform health monitoring of students, including temperature checks, "if MIT determines that such measures are prudent to maintain a safe campus environment." Testing results may be shared with "certain MIT employees or city/state public-health officials with a legitimate need to know this information."

Students will also be required to receive the seasonal flu vaccine from MIT Medical when it becomes available.

Travel

MIT has suspended Institute-sponsored travel and strongly discourages personal travel for community members.

However, "graduate students may request a waiver for essential domestic travel from the High-Risk Travel Committee.

"Students living on campus are encouraged to stay in the immediate Boston and Cambridge area," the policies write. If an undergraduate or graduate student leaves New England, they will be required to take two COVID-19 tests at MIT Medical within seven days and self-quarantine for seven days upon return.

UA recommendations

The UA Committee on COVID-19 released a Guest and Visible ID Policies Report early July, before DSL finalized its fall policies.

The report "strongly" recommended that MIT allow undergraduates to have daytime and overnight guests in residence halls "to mitigate the negative mental health consequences of social isolation." A relaxed guest policy would also promote in-person peer collaboration on academic assignments. The report cited that 13.6% of student respondents to a June UA survey indicated that no visitors should be allowed in on-campus housing.

The report also wrote that to mitigate public health risks, MIT could require guests to be asymptomatic, pass their daily health attestation, and test negative for COVID-19. Despite the UA recommendations, MIT's finalized policies do not allow undergraduates to have guests.

The report also "strongly" recommended that students not be required to wear MIT IDs visibly while in residence halls. Visible ID policies are "redundant given existing security measures" and "may disproportionately harm minority students, particularly Black students" due to racial profiling by security staff or other community members, the report wrote. MIT's finalized policies do not include visible ID policies in residence halls.

The UA Committee on COVID-19 and the House Teams of Baker, Maseeh, and McCormick also proposed that MIT "pilot" pods and new common space policies on the undergraduates living in these three dorms over the summer.

The proposal wrote that Heads of House and Graduate Resident Advisors have pointed out that social isolation has negatively affected the mental health of students living in the dorms. Summer residents felt "isolated and suffocated" and found it difficult to connect with their peers "due to the extent of the restrictions on gatherings and the use of common spaces," the proposal wrote.

The proposal recommended the reopening of outdoor spaces in residence halls, residential lounges, common study spaces, and smaller common rooms such as music or craft rooms, with physical distancing and masks required. The proposal wrote that nearly 97% of student respondents to the UA survey favored reopening common spaces.

The proposal also recommended the formation of "pods" of about four students in the same dorm, citing that over 80% of student respondents indicated that they would like MIT to implement pods.

The proposal wrote that pods would improve student mental health, allow more efficient testing and contact tracing, and improve student compliance with MIT policies. The proposal recommended that each pod should have access to a permanent "pod lounge": a triple or quad room where pod members can "relax social distancing."

Housing timeline

Undergraduate residence hall building assignments and move-in times were released July 30 in an email from HRS Director of House Operations Rich Hilton. Students may cancel their housing assignment before Aug. 28 without penalty. Move-in will take place Aug. 29-30.

Student belongings stored by Piece by Piece Movers will be transported to students' new room assignments upon their arrival, Hilton wrote. Students may also work with their House Team to retrieve belongings from in-house storage or a house-sponsored PODS container.

Undergraduates are required to sign a Student and Resident Campus Agreement before arriving on campus. Graduate students who currently live on campus must sign the agreement before registering for classes.

The agreement requires students to affirm that they will follow MIT's COVID-19 policies, "abide by any federal, state, and local public health guidelines," and "commit to doing [their] part to reduce the spread of infection." Students should also update their emergency contact information and ensure that they are registered for MIT Alert notifications, the policies write.

Failure to comply with MIT's COVID-19 policies "may result in a referral to the Committee on Discipline" or "immediate removal from MIT housing."

Undergraduates living on campus this fall are also required to complete a "non-binding" Student Departure Plan by Aug. 15 to leave campus quickly in case "circumstances require the emergency closure of MIT's campus," Hilton wrote.

The agreement writes that students are "responsible for preparing for travel and housing arrangements" in the event of a COVID-19 campus shutdown. However, "limited need-based emergency assistance funds will be available."

All classes will be conducted virtually after Thanksgiving. However, students who are unable to travel home by Nov. 22 "will be able to apply to stay on campus for the remainder of the semester," Hilton wrote.

Only undergraduates who live on-campus will have access to campus facilities and in-person instruction, President L. Rafael Reif announced to the MIT community July 7. However, graduate students who live off-campus will have access to campus facilities.

A July 9 petition to allow off-campus undergraduate seniors who signed leases prior to Reif's announcement to access campus gained over 450 signatures from students, faculty, and alumni. The petition also requests financial and legal support from MIT for seniors who break their lease to live on-campus.

However, MIT has not changed its policy. The DSL website writes that seniors who have already signed a lease to live off-campus but now wish to live on-campus can sublet, assign, or terminate their lease. Students can email questions to *offcampus@mit.edu*.

Undergraduates can send questions to *ughousingfall2020@mit.edu*.

2.009 to be replaced with abridged 2.s009 in fall semester

Many 2.009 experiences 'cannot be done in a safe manner,' according to MechE Department Head Evelyn Wang

By Shelley Choi
ASSOCIATE NEWS EDITOR

This article was published online on August 6, 2020.

2.009 (The Product Engineering Process) has been canceled for the Fall 2020 term, according to the class website. A replacement subject (2.s009) will be offered instead and is expected to satisfy the Mechanical Engineering (MechE) major's CI-M requirement.

The MechE department announced the cancellation of 2.009 in an email to MechE seniors July 27. 2.s009 will "follow an abbreviated version of the product development process used in 2.009," and "teams will develop products inspired by a very open-ended theme," the department wrote.

The class "may be able to accommodate a limited number of remote students by permission of the instructor," the department wrote, adding that they are still working to resolve issues with "viable lecture spaces" and "safety in the lab with considerations to social distancing."

Evelyn Wang '00, MechE department head, wrote in an email to The Tech that due to the uncertainties surrounding COVID-19 as well as Massachusetts and Institute policies, "many of the experiences associated with 2.009 cannot be done in a safe manner."

2.009 students typically give a final project presentation attended by over 1,000 guests in early December, but the fall term will be held virtually after Thanksgiving. Furthermore, Massachusetts limits indoor gatherings to under 25 people.

2.s009 "will have the same teaching team as 2.009," Wang wrote, although many "in-class, team-based experiential activities may not be possible."

2.009 Professor David Wallace PhD '94 wrote in an email to The Tech that "significant uncertainties about operating conditions for lectures, labs, and team-based learning experiences" made it impossible to offer "a normal 2.009."

The MechE department and 2.009 teaching staff decided to offer an alternative that "retains as much of the curriculum and format of 2.009" as safely as possible. Wallace added that "other proposed exceptions that might have allowed a more complete learning experience were not received positively."

Wallace wrote that the 2.s009 teaching staff hopes to "provide a best-possible facsimile of the 2.009 curriculum" in an "abridged" form. However, due to the shortened term, the product design ideation and development process will be "at least one development iteration shorter than 2.009."

Wallace also wrote that students may face challenges when confronted with "new modes" of working in labs and on teams with "reduced access to facilities due to capacity limitations." However, he added that he remains excited to "create the best, safe learning experience" possible and "bring lots of energy to creating new materials and adapting to the environment on campus as we learn how we can work."

Caitlin Keegan '20, a member of Fall 2019's 2.009 Ignite Pink Team, wrote in an email to *The Tech* that although 2.s009 students may not be able to have the same experience of "learning how to successfully work with your team," they "will hopefully still learn a lot about the product design process."

Rising MechE senior Jenny Chan '21 wrote in an email to *The Tech* that she wished the 2.009 staff had announced the cancellation and "other details about the class earlier." Chan added that changing the name of 2.009 to 2.s009 "hits home harder that we won't be getting the experience that we've been looking forward to all these years."

However, Chan wrote that she is "excited to see how the staff hopes to replicate the 2.009 experience" and has "faith that they will try their hardest to give us a great experience, even if it's unique in ways that we wouldn't have expected."

Some seniors may have initially opted to return to campus this fall to take 2.009. However, the MechE department wrote in their email that students may cancel their on-campus housing assignment until Aug. 28.

Advanced Standing Exams, math diagnostic to be given using third-party online proctoring software Proctortrack

Proctortrack monitors students' desktop, webcam video, and audio during exams, not supported by Linux

By Kristina Chen and Wenbo Wu
NEWS EDITORS

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The 7.012 (Introduction to Biology), 8.01 (Physics I), 8.02 (Physics II), 8.03 (Physics III), 8.04 (Quantum Physics I), 18.01 (Calculus I), and 18.02 (Calculus II) Advanced Standing Exams (ASE) and the math diagnostic will be offered virtually on MITx prior to orientation week.

The 5.111 (Principles of Chemical Science) and 5.12 (Organic Chemistry I) ASEs will not be administered for the Fall 2020 term, according to the Office of the First Year (OFY) ASE webpage. The math department will not offer its 18.03 (Differential Equations) and 18.06 (Linear Algebra) ASEs, which are usually available in the fall.

The 6.0001 (Introduction to Computer Science and Programming in Python) ASE was administered July 29. The remaining ASEs will take place during the first three weeks of August. The math diagnostic will be open for all incoming first years Aug. 6.

All ASEs and the math diagnostic require students to use Proctortrack, a software capable of monitoring activity at the core operating system, screen desktop, and testing environment levels, according to the Proctortrack website. Proctortrack also monitors students and flags possible test-policy infractions using webcam video and audio.

The software employs biometric identification using students' faces, IDs, and knuckle scans, Proctortrack's website writes.

The decision to use Proctortrack comes from the importance of having "full confidence... that those taking the exams have achieved mastery of the material on their own merits," Dean for Digital Learning Krishna Rajagopal wrote in a statement emailed to *The Tech*. Proctortrack "has been used in other contexts at MIT and is integrated with" MITx.

Rajagopal wrote that all students who required assistance for or had questions about Proctortrack have had their concerns addressed.

Rajagopal added that while there is concern over "false positives" in what Proctortrack flags as suspicious behavior, such as stretching, all flagged behavior "is reviewed by an MIT instructor, who can quickly see that nothing untoward has happened." All decisions "about academic conduct are made by MIT instructors" and not by Proctortrack, Rajagopal wrote.

Rajagopal also wrote that he does not know of faculty or departments planning to use Proctortrack for exams in Fall 2020 courses.

The Academic Policies and Regulations Team's grading policy for Fall 2020 "urges instructors to de-emphasize 'high stakes' end-of-term methods of evaluation such as final exams." Instructors "can assess their students' learning in many, and better, ways," Rajagopal wrote, so using assessments other than exams "will make Proctortrack irrelevant."

Additionally, because Proctortrack is not supported by the Linux operating system, an FAQ on the OFY's website writes that students can use MIT's licenses from Information Services and Technology to run Windows software within a virtual machine on Linux to take the exams.

The FAQ writes that proctored session data will be retained until the end of the fall term "to ensure that MIT has ability to refer to such data" if there are "questions about what happened during a given exam." Biometric data will be kept for up to one year in case students take exams over multiple semesters.

Fall ASEs and the math diagnostic typically take place on campus during orientation week. Rajagopal wrote that the decision to move the exam dates up was to ensure the start of the semester was "less hectic for students." Furthermore, the exams "are being offered twice or over a range of time within a day to accommodate students in different timezones."

6.0001 instructor Ana Bell wrote in an email to *The Tech* that the earlier date allowed students "more time to make plans that might depend upon whether or not they passed the ASE."

Rajagopal wrote that because the biology and computer science ASEs have previously been on MITx, nothing about their question style will change from previous years. The only difference in the administration of these exams is the use of Proctortrack.

Bell also wrote that more than 400 students took the 6.0001 ASE this year. Last year, 296 students took the exam.

Because the math and physics ASEs and the math diagnostic are being offered online for the first time, "they were made slightly shorter than before, but not easier or harder and there has been no change to their scope," Rajagopal wrote.

Some "longer problems were separated into shorter parts to allow for partial credit" on the math and physics ASEs, Rajagopal wrote. Additionally, the math and physics departments have "developed a brief training module to help familiarize students with the format of the problems and how to enter formulas in the online platform in advance."

Rajagopal wrote that while the math diagnostic "will present a range of fairly easy to fairly challenging short problems, as always," some problems were removed "in cases where the online format would result in a lack of clarity."

The chemistry ASEs will not be offered this Fall because "the department was unable to prepare an exam" using an online tool and hopes "to offer an in-person one next semester," Rajagopal wrote.

The OFY website writes that the chemistry department is unable to waive its GIR prerequisite for any chemistry classes, and "students who feel they are extremely advanced in chemistry" can contact the chemistry education office to discuss exemptions.

Students with concerns about Proctortrack, the ASEs, or the math diagnostic or who want to request the deletion of their data can email *firstyear@mit.edu*.

MIT to implement new campus visitor policy Fall 2020

This article was published online on August 6, 2020.

A new campus visitor policy for Fall 2020 was announced July 27 by Acting Deputy Executive Vice President Anthony Sharon, Associate Provost Krystyn Van Vliet PhD '02, Vice Chancellor Ian Waitz, and Vice President for Research Maria Zuber. To maintain low on-campus population density, "visitor access to campus will be significantly limited and discouraged through the end of 2020."

The announcement highlighted distinct groups of individuals eligible to request facilitated visits to campus. Exceptions to the general restrictions would be extended to individuals involved in "collaborative research," "instruction," or "campus construction and operations, including residential and retail services." Exceptions will also apply to individuals who need access to "benefits-related services such as medical care who are not MIT appointees."

Additionally, as highlighted in the Research Visitor Guidelines, "new appointments of visiting faculty, scholars, scientists, engineers, and affiliates will not be permitted during the fall 2020 term." Exceptions to this guideline include Martin Luther King Visiting Professors and Scholars; visiting faculty "needed to fulfill teaching responsibilities"; and visiting "faculty, scholars, scientists, engineers, and affiliates whose visits began prior to the ramp down."

Visitor restrictions for undergraduate students living in residence halls will also be enforced. According to the Undergraduate Student Policies, daytime and overnight visitors from other residence halls or outside the MIT campus are not permitted in the residence hall at any time. Additionally, fraternities, sororities, and independent living groups (FSILGs) will be closed for the Fall 2020 semester and all events and parties within residence halls and FSILGs are prohibited.

—Margaret Rodriguez

New international students with F-1 visas cannot enter US for fully-online coursework

This article was published online on August 6, 2020.

New international students holding F-1 visas and currently outside the U.S. will not be able to enter the U.S. for fully-online school programs in the fall, according to an update on the International Students Office (ISO) website.

Following MIT and Harvard's lawsuit against the U.S. Department of Homeland Security (DHS) and Immigrations and Customs Enforcement (ICE) over a July 6 directive barring students with F-1 visas from being in the U.S. for fully online courses, DHS and ICE rescinded the directive and returned to their March guidance. The guidance permits continuing international students with F-1 visas to remain in the U.S. while completing online coursework.

A DHS July 24 broadcast message writes that the March guidance "applies to nonimmigrant students who were actively enrolled at a U.S. school on March 9, 2020." ISO interpreted the message and accompanying FAQ in its update for new international students.

The broadcast message "lacks clarity" on issues for which ISO is "seeking additional information" such as the minimum number of hybrid subjects new international students with F-1 visas must take to study in the U.S., the ISO website writes.

The ISO website adds that if a new international student's courses meet the normal requirements for F-1 status, "they should be able to enter and study in the U.S." Normal F-1 full-time status requirements allow international students to take only one subject (or 12 credits) of online learning.

The deadline for both new and continuing students to arrive on campus for visa purposes is Nov. 9. ISO will work with students who are unable to enter the U.S. by that date to prepare updated visa documents for a Spring 2021 arrival at MIT.

ISO will continue to "monitor developments" and provide updates on its website.

—Kristina Chen

Massachusetts implements COVID-19 travel order for out-of-state visitors

This article was published online on August 6, 2020.

Starting Aug. 1, Massachusetts is enforcing a COVID-19 Travel Order for out-of-state visitors. Visitors not arriving from a lower-risk state must complete the Massachusetts Travel Form before entering Massachusetts and either quarantine for 14 days upon arrival or show evidence of a negative COVID-19 test from within 72 hours prior to arrival.

If no symptoms of COVID-19 develop over 14 days, visitors may resume their normal activities.

States with "average daily cases per 100K below 6 AND positive test rate below 5%, both measured as a 7-day rolling average" are considered lower-risk, according to the Massachusetts government website. Connecticut, Hawaii, Maine, New Hampshire, New Jersey, New York, Rhode Island, and Vermont are listed as lower-risk states.

Visitors who are traveling through Massachusetts to reach their final destinations, commute at least weekly into or out of Massachusetts, are seeking medical care in Massachusetts, are entering Massachusetts on military orders, or provide critical infrastructure services are also exempt from completing the Massachusetts Travel Form.

Failure to adhere to the travel order carries a fine of $500 per day.

The Massachusetts government website states that the travel order applies to "students arriving from other States or foreign countries" to attend college or boarding school and to "parents, guardians and family members who are dropping their students off" and are staying overnight. Parents, guardians, and family members who enter Massachusetts "only to drop off the student" and "immediately" leave the state would "meet the exemption of transitory travel."

MIT Medical Director Cecilia Stuopis wrote in an email to *The Tech* that the travel order will not affect the move-in process for students returning to campus since the Institute "had already planned for all students to be tested upon returning to campus."

Stuopis wrote that MIT's Housing and Residential Services "have also added information about these requirements to the FAQ information on the undergraduate and graduate Fall 2020 housing dashboards."

Information about the travel order "will also be included in future correspondence to all students who are approved to return to housing this fall" and in the Division of Student Life virtual training module on COVID Pass "that all returning residents are required to complete prior to arriving on campus."

—Kylee Carden

Solution to Breakfast
from page 13

B	L	T	S			D	O	R	M		A	L	P
R	A	G	E	D		I	D	E	A		N	I	L	E
E	M	I	L	Y		G	O	N	G		K	N	E	E
W	A	F	F	L	E	I	R	O	N		L	E	A	K
				A	N	T	S		O	R	E			
	B	L	O	N	D			C	L	O	S	E	R	
L	U	A	U			T	R	A	I	T		F	U	L
E	S	P	R	E	S	S	O	M	A	C	H	I	N	E
D	E	S		T	O	K	Y	O		A	L	T	O	
	S	E	D	A	N	S			C	A	S	E	S	
		M	S	G		S	P	A	N					
D	A	L	I		B	A	C	O	N	G	R	I	L	L
I	R	A	N		I	R	A	S		R	E	T	I	E
M	E	N	U		R	I	L	E		Y	E	A	R	N
	A	D	S		D	A	D	S			F	L	A	T

Solution to Case
from page 13

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

Solution to Pen
from page 13

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

Solution to iPad
from page 14

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