

Summary of Physics Undergraduate Perspectives on Fall 2020 Reopening Scenarios

compiled by the Society of Physics Students
(contact: [nambrath](#))

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SPS hosted an event to discuss the five reopening options presented last week. We also sent out a form to collect opinions from students unable to attend the meeting (the responses are presented in full at the end as well). We'd like to thank the department for always actively seeking undergraduate input and listening to our concerns.

1 Main takeaways

The ideal reopening scenario should meet the following conditions:

1. students continue to receive a high-quality education
2. student health and safety are prioritized
3. meaningful interactions with peers, faculty, etc. are possible
4. students are not left behind because they cannot come to campus, are in unstable homes, or need to take classes that cannot operate well remotely

Choosing a reopening scenario depends quite strongly on the manner of implementation. It relies on knowing how many people really need to be on campus and whether the quality of our education can be maintained, as well as the state of the pandemic in the fall (of course).

An in-person solution that can be implemented well and safely would be ideal. If we can guarantee that the remote and in-person versions of a class do not differ significantly in quality or substance, then an option that allows some students to be on campus and others to work remotely would also meet our needs (as in Options 3.5 and 2). Otherwise, in order to ensure no major disparities in students' educations and everyone's safety, we should operate fully remotely as per Option 1 (see [Managing inequality](#), below). Option 3.75 (three semesters) was almost unanimously rejected.

2 Our priorities

A note: we interpreted Option 2 (some students remote, others in-person) to mean that only students who really needed to be on campus would be allowed back. This includes students who need to take lab/language/studio classes that cannot be substituted with remote options. We assumed all other students would continue remotely. We also had a lengthy discussion about grading, which is summarized in the [Housing and logistics](#) section.

Unsurprisingly, most of us prefer being on-campus to learning remotely. A remote learning environment prevents us from collaborating with others on problem sets and meaningfully participating in classes with hands-on components. Working with other students is a major part of an MIT education, but this has been all but lost under remote learning.

If MIT can safely operate in-person in the fall, as per Option 3, we absolutely should. This is strongly contingent on the situation being safe enough by then. Otherwise, we should choose a solution that allows some students back on campus as long as we can be sure that remote options are not inferior to in-person options. Option 3.5 would give everyone a chance to safely come back to campus and work with peers and instructors, get to do hands-on work, and be a real part of the MIT community. If possible, Option 3.5 is preferable to Option 2, where only those students who strictly need to be on campus are allowed back. If we can't be sure that remote and in-person learning can be offered simultaneously at similar quality, we should operate remotely according to Option 1 (see [Managing inequality](#)).

The content of many physics classes can be transferred remotely quite easily. In fact, in some cases, having video lectures is almost preferable to in-person lectures because it's possible to rewind and replay. But if we continue with remote learning, we cannot compromise on quality. Students should have access to well-recorded videos and opportunities for live interactions with classmates and instructors, and real efforts must be made to reach out to struggling students.

However, for a class like JLab, the question is not about whether the class *can* be conducted remotely but whether it *should*. It seems that remote JLab is working at the moment, but if it were to continue remotely in the fall, students would entirely lose out on the hands-on component of the class. In an ideal world, it wouldn't be possible to complete JLab without ever having used an oscilloscope. Options 2 and 3.5 might allow students in JLab to get the most out of the experience, while protecting them and other physics students. If the semester has to go fully remote, it's critical that we are able to conduct modified lab experiences at home. Providing lab kits or video demonstrations can make up for the deficiencies of virtual classrooms.

It's also important to note that if remote learning is the only available option, it's quite

likely that some students will take leave for the fall. Remote learning is not the same as in-person learning, and it seems as though many students are unwilling to continue to pay tuition in the event of a substandard, if continuous, education.

2.1 Health and safety

It is imperative that, at the very least, all reopening scenarios are paired with a strong alternative remote option. Students with underlying health issues, sick family members or roommates, etc. must under no circumstances be forced to choose between risking their lives and getting the education they're paying for.

If there is a resurgence of COVID-19 cases in the fall, we hope that the events of the spring will not be repeated. We have the opportunity to plan out the fall, so MIT must reckon with this possibility. If we choose Option 3 and there is a second wave, we will be subjected to major disruption again, which is not ideal.

Option 3, which in our understanding brings everyone back to campus housing but keeps classes remote unless strictly necessary, seems to offer the same educational opportunities for most students as Option 2 but with the additional dangers of having people live in close quarters and eat in large dining halls. If MIT chooses Option 3, we must be convinced that full dorms and dining halls do not pose substantial risk. Additionally, if Option 3 is chosen, it's important that meaningful alternatives are available for students who are not comfortable being back on campus until vaccines or treatment for COVID-19 are widely available.

Option 3.5 allows students to learn essential hands-on skills, interact with their peers and instructors, and be part of the MIT community, all while ensuring students' safety. But in the event of a resurgence in cases, it might be best to keep a minimum of students on-campus, which could be possible via Option 2.

2.2 Managing inequality

MIT should not choose a reopening scenario that disproportionately harms part of the student body. There should be a huge emphasis on ensuring that the remote and in-person MIT experiences are as equal as possible. We cannot leave out international students who are unable to get visas – a problem likely to affect many incoming freshmen. We cannot leave a small minority of students to work remotely (whether it be for health, personal, or financial reasons) if it means they cannot receive the same quality of education as their on-campus peers. Having a majority of people on-campus is not ideal for this reason, unless MIT takes tangible and meaningful steps to ensure that people who are still working remotely are able to learn equally.

However, students who rely on machine shop access, hands-on studio work, lab classes

that cannot be easily transferred online (such as JLab), etc. should not see their educations suffer as a result of the reopening procedure. From this perspective, selectively bringing some students back (Option 2) might allow these students to complete their studies without hugely affecting students in other classes that can be conducted remotely. Option 3.5 also solves this problem, but it's contingent on the situation being safe enough for half of all students to be back together. In all cases, accommodations must be made for students who cannot come to campus.

2.3 Housing and logistics

We understand that housing is a major driver of which reopening scenario is chosen. However, we would like some guarantee that housing prices will not be dramatically increased if every student is given their own room, for example. Many students will not be able to bear these costs themselves.

One concern with Option 3.5 was having students move in and out of campus halfway through the semester. This would raise many of the same difficulties as the moveout this past spring, so we hope that time and support will be provided by MIT to allow for a safe transition. Travel also brings risk of infection, so implementing Option 3.5 requires a certain guarantee of safety from this perspective as well. We also hope MIT will provide some accommodation for students who cannot leave campus, as not everyone has a good learning environment at home.

2.3.1 Grading schemes

Whatever grading scheme MIT implements in the fall should be carefully thought out. Unless by far the vast majority of students are able to safely return to campus, grades should not return back to normal. MIT should err on the side of protecting vulnerable students, and this means continuing to allow flexibility via a PE/NE or other such P/NR-style grading scheme.

However, we are concerned about not being able to communicate our performance in classes to graduate schools or other programs. It seems to be the case under the current grading scheme that faculty cannot write letters of recommendation vouching for our achievements in classes. If this rule is lifted, it would compensate for having a transcript full of only PE grades. Permitting faculty to advocate for us in letters would still allow us to highlight our academic achievements in the future.

Another option is following the same protocol as for freshman fall P/NR grades. Those grades are visible to students and their academic advisors, although they do not appear on transcripts. Implementing this across the board for all students would also address this issue.

2.4 Option 3.75 should not be implemented

Cramming three full semesters into one year makes little to no sense. It requires restructuring classes and makes studying at MIT far more intense than it already is. This option also takes away IAP, which is one of the many unique things about MIT. (Many majors, including Course 8, also have required IAP-only classes. What would become of those under this scenario?) Choosing this option also precludes the possibility of a normal IAP and spring. We should not make a decision now with such a far-reaching impact. By far the vast majority of us are opposed to this.

3 Some other thoughts

Over the course of our discussion, we came up with a couple interesting ideas. Offering some compressed and accelerated half-semester courses might encourage students to interact more with peers and faculty, and provide a focal point of sorts during the semester. Also, if the fall ends up being fully remote, MIT as an institution should actively encourage remote research and internship opportunities by reaching out to faculty and the alumni network. The academic and social experiences at the heart of an MIT undergraduate education will necessarily be compromised, but these measures have the potential to help.

Again, thank you to the Physics Department and its leadership for listening to our concerns and giving us a voice in this process.

Discussion attendees

Luis Gabriel Bariuan (lbariuan)

Sujay Kazi (skazi)

Aaron Kogan (akogan21)

Tomasz Mloduchowski (mlodutb)

Karna Morey (kmorey)

Anjali Nambrath (nambrath)

Debaditya Pramanik (deba1372)

Eva Smerekanych (evasmere)

Bahrudin Trbalic (bahrudin)

and one attendee who preferred to remain anonymous.

Ian Bouche, Manuel Morales, and a few other anonymous students also provided form submissions (included in full, starting on the next page).

Full text of form responses

Below is the full text of all the form responses we received before the discussion (copied and pasted exactly as submitted).

Hi, I'm a student. My personal thoughts are that doing partial semester scenarios like the half semester or third of a year, could pose problems for a lot student who have to move in and out frequently throughout the year.

- anonymous

Whichever format will need to be a remote option as some students have underlying health issues that put them at higher risk of covid or live off-campus with roommate(s) who do.

- anonymous

Would rather just have online school then deal with multiple semesters/ blocks/ being at mit but with no friends. Especially when thinking of off campus housing it's rilly difficult if you were gonna live in apartment

- anonymous

I would feel safest if online learning continued in the fall, with campus access restricted. As someone with prior history of severe pneumonia and respiratory trouble, I do not want to risk exposure to a second wave of the virus which is expected in fall/winter. In global crisis like this, it is better to be safe than sorry. Missing out on hands-on lab experience is nothing compared to helping prevent the spread of a disease that kills off hundreds of thousands of people!

- anonymous

I understand that so much is still up in the air for the fall, and I appreciate that the 2020team has come up with several possible scenarios. In the case that not all of the undergraduate population can return to campus in the fall, I strongly prefer the scenario of "three full semesters" over that of "half students on campus half the time." I don't believe trying to compress the experiential and other educational components into half a semester would work well at all. Offering three semesters where each student is on campus for two and remote for another offers more flexibility for students while continuing to offer them the necessary time on campus to receive the in-person learning opportunities that are so important for so many of us.

- Manuel Morales (manolin)

I've been a TA for 8.02 for two semesters, and I just could not imagine that class in

one of the shorter, semester thirds. In fact, most MIT classes are so fine-tuned to their duration that I think a different time allocation for classes would simply cause more problems than it would solve, unless planned and coordinated exceedingly carefully. Further, understanding one's graduation requirements and roadmap might be a challenge for some students under these options, though not impossible.

I like half of students on campus half the time as a compromise. While I'm unsure just how effective having half as many students will be to contain the virus (generally because I'm not really an expert on the matter), this is an interesting solution! It's also good for lab classes - students could try to do condensed lab work in one half and then analysis work/presentations from home. My favorite option is probably pushing back the semester and having it like normal. I'm sad that it will likely cost us IAP, but when I think about it that may be the smallest compromise we need to make out of all the options.

Thanks for listening the the undergrads, its really, really appreciated!

- Ian Bouche (ianbo)

I still believe having fall semester as normal as possible would be the best option, even if there are still some cases left and no vaccine. I think that, to some extent, we have to be willing to accept some of the risk of contracting the disease if we are not to completely ruin MIT students' college experiences in some of the most formative years of their lives. There are just too many aspects of the MIT experience—socializing in the dorms with their unique cultures, attending fellow students' performances, being inspired by the people you meet, going to parties, exploring Boston and Cambridge, and a lot more—that can no longer happen. Of course, if it turns out that the pandemic lasts way longer than I am expecting it to, e.g. we haven't even reached the peak of cases by mid-summer, then perhaps MIT should consider implementing one of its alternative options.

Although I am unconvinced that social distancing measures on campus would help, due to everyone's proximity, I would be OK with some minimal social distancing measures like large classes moving online with a greater emphasis on one-on-one tutoring for those who want it. As an 8.02 TA, I actually think this has been kind of nice, because I can talk one-on-one with the students who would really benefit from additional instructions—those are really struggling to pass the class or who are really curious about deeper aspects of the material beyond what is covered in class.

If MIT chooses to have some partial implementation like having some students on campus for part of the time, I think it will have severe impacts on the semester organization, as well as the student life and culture, that would make it feel even worse than just keeping everyone at home. As a result, if MIT cannot bring everyone back with some limited social distancing measures, then I think MIT should just keep everyone home for one more semester, with a focus on trying to make sure IAP and spring 2021 function normally again. In such a case, MIT should invest more into the activities that students do mostly alone anyway, namely research. MIT should encourage their

professors to give out more UROPs and encourage their alumni connections to find remote internships and research opportunities for students. I think the social aspect of MIT classes is pretty important, so I think a greater emphasis on research or internships for the fall would be better if we must spend our time away from campus.

If MIT absolutely must go on one of these partial routes of having certain fractions of students on campus for certain fractions of time, then I think that the $(1/2)$ - $(1/2)$ model of the semester is much better than the $(2/3)$ - $(2/3)$ - $(2/3)$ model of the whole school year. First, it doesn't require as much travel for the students. Second, it doesn't tamper with IAP or spring 2021, so if the pandemic has calmed down by December 2020, we can have those normally. In particular, IAP may seem expendable, but IAP is one of the things that makes MIT different from most elite universities, so it should not be eliminated unless the pandemic continues into December. In either scenario, I would recommend that students who don't need to be on campus (e.g. most math majors, most physics majors who aren't taking JLab) should be able to apply to change their semester to being fully remote; and students who really benefit from physically being on campus (e.g. those involved in intensely collaborative project-based endeavors, such as 2.009) should be able to apply to change their semester to being fully on campus.

Ultimately, I hope that MIT takes a course of action that is not just about minimizing its liabilities. I also hope that MIT does not make a decision too early, because I believe that will lead to a decision that overreacts to the state of the pandemic. In particular, I hope that MIT does not make a final decision on the nature of the fall semester until at least mid-July.

- Sujay Kazi (skazi)

The transition to remote has occurred and under the circumstances students, staff and professors should be protected as first priority - anyone at any age can have underlying health issues that put them at greater risk (or be living with someone who does) and anyone at any age can be an asymptomatic carrier. With a sustained high plateau likely only slowly to decline in urban areas and second wave likely coming in the fall or winter, without a vaccine yet in place, even with many efforts at state and local level in the Boston area (gearing up of attempts to identify, trace, isolation), how could it be reasonable for anything other than remote to take place in the fall (or spring 2021) given what we are learning about transmission? The idea of even traveling back to campus - that would be a risk in and of itself, and taken together with other universities would contribute to density in an already dense area. The idea of another urgent evacuation in a second surge when students might be infected and get sick themselves, or have to again then travel home through crowded airports putting themselves at further risk, and then be a possible infection risk to their families.... The whole idea of doing this seems premature - unfeasible at best and irresponsible at worst. Of course a plan is needed for eventual re-opening, though... in the meantime... for this fall:

We want and need to and are determined to continue our studies and are grateful for all

of the above-and-beyond efforts of so many to allow us to continue to, but we are also MIT and we can do this safely without putting our whole community at risk: Remote learning, ship us kits for modified lab experiences when possible, video demonstrations of experiments then allowing us to do our own data analysis etc. Another example, in biology classes there have been virtual dissection options available. How might we do something similar for other applications? Simulations. We are creative, motivated to learn and can make the most of what can be remotely offered. It is a shared responsibility. Let's trust each other to make the most of it.

... And then share with other institutions for the better of our common good. What if groups of universities work together just as states have formed regional alliances, where departments work with their cohorts to develop and share innovative remote learning experiences and tools? This would reduce duplication of effort and at the same time bring more minds and hands and resources to the scale of the challenge. It could also be incredibly enriching for all. Just as area hospitals in New York and elsewhere are breaking down pre-existing barriers and are working together, universities can do this. This is not a one-semester issue, the investment and what would come out of it would be inherently worthwhile. MIT could lead the way with this, without being burdened to carry all of it.

Thanks for always caring and for inviting and receiving student input. The Physics Dept has been truly amazing.

- anonymous