Chair of the Faculty

In Academic Year 2020, Professor Rick Danheiser (Department of Chemistry) served as chair of the faculty, Professor Duane Boning (Department of Electrical Engineering and Computer Science) served as associate chair, and Professor David Singer (Department of Political Science) served as secretary. Professor Lily Tsai (Department of Political Science) served as chair-elect.

There were 1,056 faculty members during AY2020, of whom 154 were assistant professors, 224 were associate professors, and 678 were full professors. In addition, there were 65 post-tenure professors.

Institute Faculty Meetings

Eight Institute Faculty meetings were held. The last three were held virtually, via the video conferencing platform Zoom, due to the COVID-19 pandemic. Two overarching topics dominated the agendas over the course of the year: (1) the involvement of convicted sex offender Jeffrey Epstein with MIT through visits to the campus and financial support via gifts, as well as related highly significant concerns regarding campus culture, community climate, and shared governance, and (2) the COVID-19 pandemic.

The September and October meetings focused on issues pertaining to Epstein. Faculty expressed substantial concerns, and two ad hoc committees were announced to address some of the key issues raised: the Ad Hoc Faculty Committee on Guidelines for Outside Engagements, appointed by Professor Danheiser and chaired by Professor Tavneet Suri (MIT Sloan School of Management), and the Ad Hoc Committee to Review MIT Gift Processes, appointed by Provost Martin Schmidt and chaired by Professor Peter Fisher (Department of Physics).

A committee had initially been appointed in summer 2019 by Professor Susan Silbey (chair emerita) with a specific focus on the Institute's international activities. Before it began deliberations, Professor Danheiser dissolved this nascent committee, appointing several of its members to the new outside engagements committee.

Several members of the Suri committee also served on the Fisher committee to promote communication between the committees and ensure alignment in their recommendations. The Undergraduate Association and the Graduate Student Council were asked to convene a committee to run in parallel with the Suri committee and provide frequent input, and the presidents of the association and the council served as members of the Fisher committee. The reports of the Suri and Fisher committees were expected to be completed by the end of the academic year but had to be postponed until late summer 2020 due to the COVID-19 pandemic. Both committees did, however, provide updates at subsequent Institute Faculty meetings.

In December, there was an update and discussion on community climate, with key findings presented from the Association of American Universities 2019 Campus Climate Survey on Sexual Assault and Misconduct. The co-chairs of MIT's four working groups addressing the recommendations of the *National Academies Report on the Sexual Harassment of Women* also summarized and discussed their recommendations for improving the Institute's climate.

The faculty officers hosted a town hall in February to provide members of the Faculty an opportunity to discuss how to rebalance the role of the Faculty in the shared governance of the Institute. The results of the meeting, including a proposal to establish a working group on Faculty–MIT Corporation relations, were discussed at the February Faculty meeting.

Impacts of the COVID-19 pandemic on MIT and the Institute's response featured prominently in the March, April, and May meetings.

Along with more typical updates to *Rules and Regulations of the Faculty*—such as the addition of two postdocs to the Committee on the Library System and a change in the name of the Physical Education General Institute Requirement (GIR) to Physical Education and Wellness—a change was approved to the process by which members of the Committee on Nominations are selected. Going forward, the president will no longer appoint members of the committee. Instead, nominees will be recruited by faculty officers and elected by the Faculty through the standard process. In addition, a proposal from the Committee on the Undergraduate Program was approved to establish a flexible pass/no record (P/NR) grading system for undergraduate students.

The Faculty also received briefings and updates on the development of the organizational structure of the MIT Stephen A. Schwarzman College of Computing, matters pertaining to the Institute's international activities, and an updated policy for handling harassment and discrimination complaints against faculty members.

The Faculty heard the regular annual reports on underrepresented minority faculty and graduate student recruitment and retention, tuition and financial aid, the Committee on Discipline's caseload and disciplinary trends for the previous academic year, the slate of nominations for faculty officers and the standing committees of the Faculty, and citations for faculty moving from tenured status to post-tenure professor or professor emerita/emeritus. There was also a memorial resolution for Professor Patrick Winston (Electrical Engineering and Computer Science), who passed away in July 2019.

Faculty Awards and Recognition

On February 11, Professor Susan Silbey (Anthropology and Sloan) presented the 2019–2020 Killian Lecture ("Resilience of Law: Stories from Everyday Life"). Associate Professor Alex Shalek (Chemistry) was recognized as the recipient of the Harold E. Edgerton Faculty Achievement Award in April, and in May, Professor Susan Solomon (Earth, Atmospheric and Planetary Sciences) was named the winner of the James R. Killian Jr. Faculty Achievement Award; Professor Solomon will present next year's Killian Lecture.

Faculty Officer Activities

The three faculty officers met monthly with the Institute's senior administration on behalf of the Faculty. The officers continued the long-held tradition of hosting informal monthly dinners for Institute faculty, known as Random Faculty Dinners; during AY2020, they successfully piloted Random Faculty Lunches to enable additional faculty members to participate. The final three dinners and last lunch in the spring semester were canceled due to the pandemic. The officers also conducted a listening tour in both semesters, visiting with each school council to learn what was on the minds of faculty members. All three officers participated in the monthly department heads' lunches as well.

As chair of the faculty, Professor Danheiser served as a member of Academic Council, the Academic Appointments Subgroup, and the Deans' Group as well as serving on the MITx Faculty Advisory Committee, the Enrollment Management Group, and the Corporation Joint Advisory Committee on Institute-Wide Affairs. Professor Boning, associate chair, served as a member of the Committee on the Undergraduate Program, the Committee on Graduate Programs, and the International Advisory Committee. Professor Singer, secretary, served on the Committee on Race and Diversity. Professor Boning chaired the search for a new registrar; Tami Kaplan, faculty governance administrator, also served as a member of the search committee.

With the advent of COVID-19, the three officers and Tami Kaplan served on the Academic Continuity Working Group, which began meeting in early March and continued beyond the end of the academic year. In order to address and develop policies and regulations for MIT's undergraduate and graduate programs during the time of disruption, Professor Danheiser established the Academic Policy and Regulations Team (APART) in early April and served as its chair; Professors Boning and Singer were members, and Kaplan served as staff person. The other members included the current and incoming chairs of the Committee on Academic Performance, the Committee on Curricula, the Committee on Graduate Programs, and the Committee on the Undergraduate Program, joined by the registrar, the director of the Teaching and Learning Lab, an undergraduate, and a graduate student. APART was charged with the following: "to recommend, seek input from stakeholders, and implement changes in academic policies and regulations in response to COVID-19. The team is also responsible for clarifying interpretation and application of these policies, for evaluating changes to [MIT's] subject evaluation process, and other matters that may arise."

Professor Danheiser wrote the following articles for the MIT Faculty Newsletter:

- "On the Responsibilities of Instructors" (September/October 2019)
- "'A Peculiar MIT Concoction': Our System of Faculty Governance–Part I" (November/December 2019)
- "Epstein and MIT: The Unanswered Questions" (January/February 2020)
- "Education in the Time of COVID-19" (March/April 2020)
- "'May You Live in Interesting Times': The Year in Review" (May/June 2020)

Faculty committees are often referred to by acronym, as follows:

- Faculty Policy Committee: FPC
- Committee on Academic Performance: CAP
- Committee on Campus Planning: CCP
- Committee on Curricula: CoC
- Committee on Discipline: COD
- Committee on Graduate Programs: CGP
- Committee on the Library System: CLS

- Committee on Nominations: CoN
- Committee on Student Life: CSL
- Committee on Undergraduate Admissions and Financial Aid: CUAFA
- Committee on the Undergraduate Program: CUP
- Subcommittee on the Communication Requirement: SOCR
- Subcommittee on the HASS Requirement: SHR

Faculty Policy Committee

Chaired by Professor Danheiser with Tami Kaplan as staff person, the Faculty Policy Committee met on 15 Thursdays during the fall and spring terms to conduct consultative, oversight, and policy-making activities.

Curricular Issues

Committee members were informed about and discussed the usual range of education-related issues during AY2020. Key among them were a proposal to establish a flexible pass/no record option for undergraduates sponsored by the Committee on the Undergraduate Program (discussed in more detail below) and planning related to the COVID-19 disruption. In addition, Vice Chancellor Ian Waitz updated FPC on the curricular experiments licensed by CUP in the two previous academic years. Vice Chancellor Waitz also led a discussion about subject evaluations together with Janet Rankin, director of the Teaching and Learning Lab. Professor Danheiser and Vice Chancellor Waitz subsequently planned the creation of two ad hoc committees to address issues brought up in the discussion: one on teaching and learning assessment (with Rankin) and one on graduate advising and mentoring (with Associate Provost Tim Jamison). No new degree proposals were brought to FPC during AY2020.

Faculty Governance

In its role providing oversight of the faculty governance system, FPC addressed two key issues during AY2020. The first involved developing a proposal to change *Rules and Regulations of the Faculty* regarding how the membership of the Committee on Nominations is selected. The essential element of the change was that the membership would be elected by the Faculty, along the lines of the other standing faculty committees, rather than appointed by the president; nominees for election would be selected by the faculty officers. These changes were approved by the Faculty in April 2020.

The second issue pertained to electronic voting at Institute Faculty meetings. Part of this was resolved straightforwardly due to changes in business processes necessitated by COVID-19: votes at the April and May 2020 Faculty meetings were conducted electronically, through a system developed by Professor and FPC member Isaac Chuang and Duane Boning. Further questions, such as whether to permit electronic voting in absentia, were postponed to the 2021 academic year.

In addition, the committee discussed at four meetings the proposal to establish a Faculty–MIT Corporation working group to improve communication and coordination.

Finally, the Committee on Campus Planning presented its annual report to FPC. CCP continues to work toward establishing a place for its input within the intricate campus planning process. Housing remains a critical concern for both committees.

Institute-Wide Issues

To develop a broader context on Institute activities, FPC invited a number of visitors on a wide range of key issues. These briefings included visits with Dean Daniel Huttenlocher, who provided an update on the ongoing development of the Schwarzman College of Computing, and Vice President for Research Maria Zuber, who offered an update on the status of the MIT Climate Action Plan.

Following up on the report in 2010 of the Special Faculty Committee on Promotion and Tenure Processes, Professor Danheiser led discussions with FPC regarding questions pertaining to MIT's four faculty ranks and the promotion process, as well as establishing guidelines for communicating with junior faculty. In a return to the recommendations of the 2010 report, FPC endorsed a simplification in the process for promotions with regard to the requirement for external letters at each stage.

Special Issues

Jeffrey Epstein

FPC discussed numerous concerns in the wake of the revelations regarding convicted sex offender Jeffrey Epstein's connections and involvement with MIT. Key aspects of these discussions was the creation by Professor Danheiser of the Ad Hoc Faculty Committee on Guidelines for Outside Engagements, chaired by Tavneet Suri, and the creation by Provost Martin Schmidt of the Ad Hoc Committee to Review MIT Gift Processes, chaired by Peter Fisher. FPC provided input as these committees were being established, and Professors Suri and Fisher visited with FPC to provide updates. FPC also discussed the progress of the fact-finding report by the law firm Goodwin Procter, which was hired by the MIT Executive Committee to conduct an external investigation into the Epstein situation.

The COVID-19 Pandemic

MIT's response to the pandemic was a predominant concern of FPC during the second half of the spring semester, due to the primary role of faculty governance with regard to the Institute's educational mission. One notable issue was the role of faculty members in the decision-making processes involved in the Institute's response to COVID-19. FPC members also provided input on potential scenarios for MIT educational efforts in fall 2020. As MIT pivoted to remote teaching and learning in mid-March, these topics were of significant concern to FPC. The impact of COVID-19 on the promotion and tenure process was also discussed, along with possible ways to ameliorate this impact.

Meetings with Senior Leadership

In discussions with the president, provost, and chair of the MIT Corporation, the committee expressed continuing faculty interest in graduate tuition, the challenges of climate change, MIT's Climate Action Plan, and the Institute's fundraising efforts.

Additional topics of note included the Epstein gifts and related follow-up, interest in MIT's promotion and tenure processes, the inclusion of department climate and mentorship in the visiting committee process, the financial impact on MIT of the changes implemented because of the COVID-19 pandemic, and Institute governance and the involvement of faculty in the Corporation.

Committee Membership

FPC members were saddened to learn of the death of one of their own, Patrick Winston, on July 19, 2019. Isaac Chuang was appointed by the Committee on Nominations to complete Professor Winston's term. Professor Haynes Miller completed his term on December 31, 2019, and Professors David Geltner and Georgia Perakis completed their terms on June 30, 2020. Professors Stephen Graves and Erica James were elected to join FPC for three-year terms beginning in 2020–2021. Lily Tsai was chosen to serve as chair-elect of the faculty during 2020–2021 and as chair of the faculty from 2021 to 2023.

Committee on Academic Performance

Chaired by Professor Kristala Jones Prather with Jocelyn Heywood as staff person, the Committee on Academic Performance concerns itself with the academic progress of undergraduate students at MIT. The work of the committee typically involves consideration of petitions to change a student's academic record (mostly to allow the late dropping and adding of subjects), reviews of students who appear to be making insufficient academic progress, and recommendations of SB degrees to the Faculty.

CAP also makes recommendations to the Faculty on academic standards, the academic calendar, examinations, degree requirements, and grading.

Responding to the COVID-19-Related Significant Disruption

The declaration of a Significant Disruption and issuance of Emergency Academic Regulations raised several issues for CAP. The committee, in consultation with the Department of Athletics, Physical Education, and Recreation (DAPER), took the perhaps unprecedented step of waiving an Institute requirement for members of the Class of 2020: the Physical Education and Wellness requirement was reduced to reflect the loss of one quarter of in-person classes. The committee also determined that a process for granting deficiency degrees was warranted. The final guidelines allowed for a single deficiency to exist with a General Institute Requirement—if the student was in good standing prior to the start of the disruption—relaxing the restriction on consideration of deficiencies only in departmental requirements. All other guidelines remained in effect. Ultimately, only three students were recommended for deficiency degrees, none in GIRs.

The use of emergency alternate grades presented a challenge to the normal process of "flags" associated with end-of-term meetings. Since no grade point averages (GPAs) were computed for students taking only full-term subjects, the committee generated flags based on fewer than 36 units earned in the term. The committee also issued guidance recommending that students not be placed on academic warning if there had been no previous warnings (upper class students) or flags (first-year students) and sought to minimize deferred action cases.

Petitions

CAP reviewed 922 petitions this year, as compared with 747 in AY2019. A total of 801 petitions (87%) were approved, while 121 (13%) were denied. There was a slight increase in the number of petitions due to the CUP first-year experiment and the process for students to choose pass/no record grading on certain GIRs. The lack of familiarity with the online add-drop process continues to be an issue, along with the number of first-year experiments and the rules around grading options. CAP will continue to work with the Registrar's Office and the Office of the First Year on messaging to all students. CAP also continues to see high numbers of "failure to click" petitions.

End-of-Term Academic Actions

In AY2020, 190 undergraduate students (approximately 4% of the student body) were flagged for review at CAP's grades meetings. Students were flagged for review in the fall if they had a term GPA of 3.0 or lower or had registered for fewer than 36 units. In the spring, students were flagged only if they earned fewer than 36 units. More students were flagged in the fall (140) than in the spring (50).

CAP issued 164 academic warnings as a result of these reviews, as compared with last year's number of 239. Ten students were required to take an academic leave. Last year's number was 15. Details of this year's actions are given below. No required academic leave decisions were issued in the spring, a result of the unprecedented circumstances of that term.

CAP End-of-Term Action Summary, AY2020

Year	Fall 2019 warnings	Fall 2019 required academic leaves	Spring 2020 warnings	Spring 2020 required academic leaves
First-year students	9	0	4	0
Sophomores	23	3	9	0
Juniors	47	1	13	0
Seniors	39	6	20	0
Total	**118**	**10**	**46**	**0**

The committee continued to send commendatory emails to students who completed their first term back from taking a leave with an excellent academic record. The committee also commended students who were on warning for the term and performed well above minimum expectations. CAP sent eight of these emails during AY2020. Student Support Services also sent unofficial recognition emails to students who did well.

Degrees

In AY2020, CAP recommended degrees as follows:

September 2019: 7 students, 7 majors

February 2020: 84 students, 97 majors

June 2020: 1,011 students, 1,199 majors

Returning Students

Student Support Services reported returning student data to the committee in September 2019 and February 2020 as follows:

- Student Support Services received 39 completed requests for return from personal, medical, or required academic leave for fall 2019. Thirty-four (87%) of these requests were approved and five (13%) were denied. Twenty-two students returned under the new leave of absence category. Their returns were automatically processed without CAP approval.
- Student Support Services received 26 completed requests for return from personal, medical, or required academic leave for spring 2020. All of these requests were approved. Twenty students returned under the new leave of absence category. Their returns were automatically processed without CAP approval.

Policies and Procedures

CAP is charged with reviewing and approving all requests to return from leaves, including personal, medical, and required academic leaves. The policy has been that the committee chair is authorized to approve return requests unilaterally but must consult other members of the committee prior to issuing a denial. In fall 2019, the committee approved the following change: if MIT Medical does not support the request to return from a medical leave, it is at the chair's discretion to consult the committee before denying a request. This procedural change was made after determining that, over the prior seven terms, the committee had never overruled the judgment of the medical professionals.

Membership

The committee enjoyed a year of stable membership, with no changes during the year. The average attendance of the nine voting members at petition review and end-of-term meetings was seven for each term.

Two faculty committee members are not returning due to their term ending and/or a scheduled sabbatical: Kristala Jones Prather (chair) and Professor Markus Klute. We thank them for their service to the MIT community.

Committee on Campus Planning

The Committee on Campus Planning is chaired by Brent Ryan with Amy Kaiser as staff person. CCP was created six years ago when faculty members called for more input in the Kendall Square project. Since that time, the committee has learned about the complex process of campus planning at MIT and established a presence in the planning process by keeping a finger on the pulse of projects. Meetings are used to deepen understanding of how the campus is evolving and to ask tough questions of those who are driving campus change.

Activities

This past academic year, we received updates on major building projects from the Department of Facilities and the Office of Campus Planning, heard from the MIT

Office of Sustainability about campus resiliency efforts, and toured the buildings now under construction in East Campus/Kendall Square following a briefing from the MIT Investment Management Company (MITIMCo). We reflected on in-progress projects, such as the graduate housing facility, and met twice with Associate Provost for Space Krystyn Van Vliet, sharing questions and concerns.

Hearing from members of the MIT community about their campus planning questions and concerns was a focus for CCP. We met with the council of each school, the Graduate Student Council's Housing and Community Affairs group, the Faculty Policy Committee, and the Senior Women's Faculty Council. Issues raised in these meetings included the following.

- Role of CCP: How can/does the committee communicate with senior administration? How is the committee involved in campus building projects? How does the committee influence planning decisions? Could CCP be more impactful/proactive? Are there opportunities to increase communication between faculty and administration on projects or opportunities for more coordination between CCP and departments advancing projects? Should CCP have membership on the Committee for Renovation and Space Planning and/or its subcommittees? The general sense was that it is very positive to have CCP as a convener of conversation and a conduit for communication.
- Role of MITIMCo: Are we effectively balancing academic versus endowment priorities when allocating land for development? Should CCP include a MITIMCo member?
- Desire among students for more consultation with administration on campus planning issues: Examples include the desire for ongoing opportunities for graduate student feedback (e.g., on graduate housing projects) and ongoing communication with CCP. Could CCP add more student voices?
- Desire for more (affordable) housing: This is a need among graduate students, postdocs and junior faculty members, and faculty, alumni, and other MIT affiliates. Concerns were raised about the high cost of rent at Site 4 and the future graduate dorm.
- Need for (up-to-date) classrooms: How can this be made a focus?
- Capital projects: Issues include the siting of the Schwarzman College of Computing, construction impacts of library renovations, development on Vassar Street, and the Kendall and Volpe initiatives.
- MIT's planning/development process: How are decisions made about which projects move forward? Could there be better communication and mitigation around construction impacts and better communication about capital projects as they are developed? Do donors play an outsized role in shaping priorities? Could long-range plans and supporting information be made available?
- Planning ideas: Campus boundaries and urban contexts should be considered along with long-term needs. How will MIT and its programs evolve (e.g., distance education)? Should a portion of the campus be preserved for academic and research

uses only? Should we be planning 50 to 100 years ahead? Should MIT develop a formal, comprehensive plan? Are there opportunities for more interesting, innovative spaces in Kendall Square? How could each school's renewal and space needs be addressed? Could we reduce traffic congestion and improve walking conditions in and near Kendall Square? Could we strengthen connections between Sloan and other parts of the campus (e.g., by extending the tunnel system)?

- Communication moving forward: Should we request future updates and school council visits? Should we include regular CCP columns in the MIT Faculty Newsletter or create a website? Should we have more "artifacts" documenting our work?

Looking Forward

CCP is tasked with representing the faculty voice on plans for MIT's evolving campus. The committee seeks both to strengthen and to broaden that voice. In the coming academic year—a year certain to look like no other before it—the committee plans to continue listening to the MIT community's concerns and aspirations for how the campus is evolving, to incorporate more student voices among its members, and to find more ways to shape the projects that shape our campus.

Committee on Curricula

The Committee on Curricula is chaired by Jacob White, with Pam Walcott as executive officer. CoC acts on proposals to create, revise, or remove undergraduate subjects; proposals to create, revise, or terminate undergraduate curricula; student applications for double majors; and petitions for substitutions for the General Institute Requirements. The voting members consist of six faculty (including the chair) and four student members. The committee met seven times during the fall term, three times during the Independent Activities Period (IAP) in January, and seven times during the spring term.

Review of Undergraduate Subjects

During the academic year, the committee acted on 590 subject proposals, including proposals for 52 new subjects, and approved numerous minor changes to degree charts.

Review of Undergraduate Curricula

The committee approved a number of major curricular changes, as follows.

- Course 3: substantial SB revisions in Courses 3, 3-A, and 3-C to increase the flexibility of the program in response to input from students and alumni, and revisions to the minor in archaeology and materials
- Course 5: clarification of maximum lab restricted elective units required for the SB in chemistry and substantial changes to required subjects and electives in the minor in polymers and soft matter
- Course 5-7: replacement of restricted elective 7.09 with two subjects, 7.093 (six units) and 7.094 (six units)

- Course 6-7: replacement of restricted elective 7.09 with two subjects, 7.093 (six units) and 7.094 (six units)
- Course 6-14: minor revision of Bulletin description
- Course 10: substantial changes to the SB in chemical engineering to provide greater flexibility to students, improve delivery of core engineering content, and update prerequisites to reflect subject materials; minor changes to Course 10-B to clarify the requirements; minor changes to Course 10-C that will correct an oversight and make it consistent with the other Course 10 programs; and substantial changes to Course 10-ENG, including the program name, to bring the program into ABET (Accreditation Board for Engineering and Technology) compliance
- Course 21H: reduction in the number of subjects required for the SB in history from 14 to 11 to aid students who double major in Course 21H
- Course 24: addition of new subjects from Course 6-9 to the SB in linguistics and philosophy (linguistics track)
- Science, technology, and society: reduction in the number of elective subjects required from five to four and removal of option from Tier 1
- Interdisciplinary: substantial changes to the minor in entrepreneurship and innovation, a minor change to the minor in energy studies, and substantial changes to the minor in environment and sustainability

Other Actions

- Provided feedback on and endorsed the CUP proposal for a new flexible P/NR grading option, which has been approved by the Faculty and will be available for first-year students entering in fall 2020 and beyond. Students have the option to convert up to 48 units to P/NR grading after receiving their final grade.
- Approved 18 new "discovery" subjects designed to expose students—primarily those in their first year—to various fields of inquiry. The subjects range from one to three units, are graded P/D/F, and will count toward the nine-unit, discovery-focused credit limit for first-year students approved as part of the CUP experimental grading policy. The credit limit aspect of the experiment has been extended for first-year students entering in fall 2020.
- Participated in discussions with CUP, SHR, and SOCR pertaining to the new organization structure of 21G and how its subject proposals may affect its degree program and reviewed several subject revisions in conjunction with SHR and SOCR.
- Reviewed fall 2018 and spring 2019 subject evaluation data on subjects for which students reported spending significantly more time than expected based on assigned units. The committee discussed possibly sending a spreadsheet of the aggregated data to all department heads, as opposed to sending letters only in the case of subjects in which the data showed that students reported spending more time than indicated by the subject units.

- Endorsed, along with CUP, the proposed name change for the Physical Education GIR to Physical Education and Wellness.
- Discussed possible GIR waivers for deficient seniors due to the Covid disruption. Cases were reviewed on an individual basis in conjunction with CAP.

Committee on Discipline

The Committee on Discipline is chaired by Andrew Whittle, with Tessa McLain as executive officer.

Reported Cases

There were 290 total complaints brought to the attention of the Committee on Discipline in AY2020. The committee resolved complaints by adjudicating cases of alleged misconduct. Of e 290 complaints, 258 (89%) were complaints alleging individual student misconduct and 32 (11%) were complaints alleging student organization misconduct.

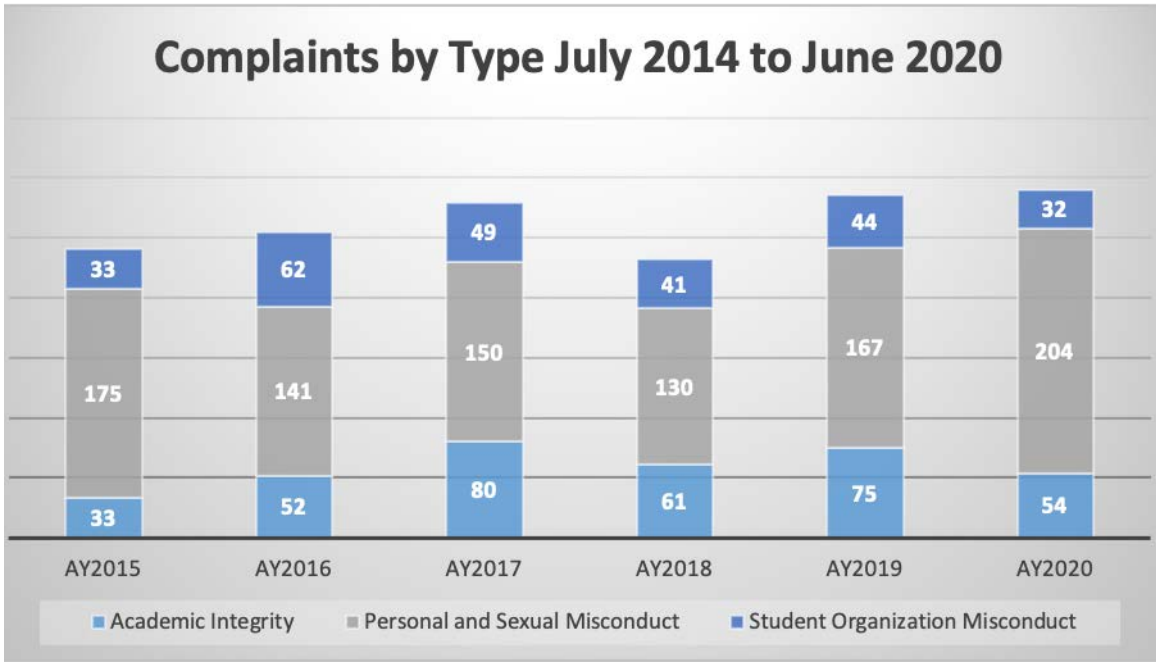
The tables below summarize alleged policy violations in AY2020 relative to previous years. There is often more than one alleged policy violation per complaint, so there are more alleged policy violations than total complaints.

Types of Alleged Policy Violations for Individual Student Misconduct, AY2018, AY2019, and AY2020

Alleged policy violation	AY2018	AY2019	AY2020
Academic misconduct	61	87	54
Alcohol	55	79	98
Other drugs	6	22	11
Assault, reckless endangerment, threats/intimidation	14	25	19
Harassment	4	4	5
Property damage	9	11	25
Disorderly conduct	17	5	7
Theft	5	1	2
Unauthorized access/improper use of MIT property	17	23	42
Fire safety, arson	17	2	4
Weapons	2	1	0
Residential and housing policies	14	15	25
Institute expectations of behavior/integrity	25	33	28
Other	11	10	6
Community well-being	8	8	10
Sexual harassment	0	5	4
Stalking	1	2	1
Nonconsensual sexual contact or penetration	1	4	5
Intimate partner violence	0	3	4
Total	**267**	**340**	**350**

Types of Alleged Policy Violations for Student Organization Misconduct, AY2018, AY2019, and AY2020

Alleged policy violation	AY2018	AY2019	AY2020
Alcohol	20	38	36
Other drugs	0	3	0
Exceeding occupancy	8	11	9
Fire safety	1	2	0
Hazing	2	0	0
Harassment	1	0	1
Disorderly conduct	5	2	2
Noise complaints	7	15	8
Recruitment violations	0	3	3
Social event policy violations	38	49	21
Other	4	8	1
Total	**86**	**131**	**81**



Case Trend

The majority of the cases were reported during the fall semester. Given the Institute closing due to the COVID-19 pandemic, COD spring semester reporting decreased.

The chart below shows that the number of cases reported to COD increased from 241 in 2014–2015 to 255 in 2015–2016 and to 279 in 2016–2017 before decreasing to 232 in 2017–2018. This was followed by increases in 2018–2019 (286 cases) and 2019–2020 (290 cases).

Case Resolutions

COD uses the resolution methods described in the *Committee on Discipline Rules*.

Case Resolutions by Type, AY2018, AY2019, and AY2020

Resolution Type	AY2018	AY2019	AY2020
COD administrative resolution	119	121	152
COD hearing	2	4	2
COD sanctioning panel	2	7	2
COD sexual misconduct hearing	0	2	2
COD sexual misconduct sanctioning panel	1	0	0
Faculty letters to file	47	62	46
Complainant withdrew case or dismissal*	9	19	13
Good Samaritan Amnesty Policy (GSAP) applied: referred to Alcohol and Other Drug Services**	7	7	4
Non-adjudicative resolution: restorative justice, mediation, referral to other office	4	20	36
Delegated to student-run judicial mechanism	27	30	22
Cases pending (as of June 30)	14	14	11
Total	**232**	**286**	**290**

Note: Committee on Discpline (COD).

*Dismissal is not the same as a finding of not responsible. It means that the situation did not rise to the level of a possible policy violation but still may have involved educational follow-up.

**Most GSAP cases were referred directly to Alcohol and Other Drug Services; only a few were referred to the Office of Student Conduct because at the onset it was unclear whether or not the GSAP applied in the case.

Case Outcomes

COD strives to meet its educational philosophy of student accountability through intentional educational sanctions (e.g., substance use education, mentoring programs, projects, reflections, and workshops). Through these structured sanctions, students learn about various interpersonal skills and are able to reflect on their own personal development. A small number of cases (2% in AY2020) require a student to be separated from the Institute, either temporarily or permanently. Approximately 98% of cases are resolved without suspension or expulsion.

Case Sanctions by Type, AY2017–AY2020

Sanction type	AY2017	AY2018	AY2019	AY2020
Degree revocation	0	0	1	0
Expulsion	2	1	3	0
Suspension	8	4	3	2
Probation	34	29	25	46
Removal from Institute housing (house or FSILG*)	2	0	0	1
Housing relocation	2	1	0	2
COD warning	59	79	74	117
Faculty letter to file	63	47	61	48
Substance abuse education or treatment	53	58	55	88
Restitution	1	0	0	2
Other educational sanctions or referrals	181	148	138	136
Decision-making workshop	N/A	29	15	51
No contact order, directive to stay away from certain buildings	9	4	4	7
Academic integrity seminar	5	3	6	2

Note: It is common for COD to assign more than one sanction in a case, so there are more sanctions than cases. Sanctions exclude all cases in which the respondent was found not responsible, the case was dismissed, or the case is still pending.

*Fraternity, sorority, and independent living group.

Committee on Graduate Programs

The Committee on Graduate Programs is chaired by Daniel Frey with Jessica Landry as staff person. During AY2020, CGP received an update on the Supply Chain Management (SCM) Blended Program, approved a modification to the nonresident status policy, reviewed changes to the Schwarzman College of Computing, and discussed graduate student career exploration. The committee met five times during the academic year.

During the fall term, the committee approved housekeeping changes to Section 2.85.5 (master of business administration) of the *Rules and Regulations of the Faculty* to resolve two discrepancies in the MBA degree definition that required language updates to align with the existing requirements of programs that grant this type of degree. For the degree of master of business administration through the two-year MBA program, additional language was approved to describe the requirement for students who choose to write a 24-unit thesis. For the master of business administration through the two-year Leaders for Global Operations program, additional language was approved to describe the unit requirements for students in this program.

Professor Yossi Sheffi provided an update to the committee on the Supply Chain Management Blended Program offered by the Center for Transportation and Logistics (CTL). The SCM residential track (SCMr) and the blended track (SCMb) offer, respectively, a master of engineering in supply chain management and a master of applied science in supply chain management. A master of engineering is earned by completing a 12-unit

thesis in addition to the required units of graduate subjects. A master of applied science does not require a thesis, instead requiring a nine-unit capstone project.

SCMb students have completed the MITx MicroMasters credential in supply chain management, consisting of five online core courses and a proctored final exam. Once on campus, students take three courses during IAP and six courses in the spring term, choosing from 11 SCM electives. SCMb students who earn the master of applied science typically begin their capstone project before they arrive on campus, since the projects require more than one term to complete.

The committee and Professor Sheffi discussed the external review process for the SCM program, currently performed by an advisory board made up of industry experts and academics; unlike other academic units, CTL does not have a Corporation visiting committee with a biannual review. CGP and Professor Sheffi concurred that the program would benefit from having an assigned visiting committee; the CGP chair and vice chancellor will discuss next steps.

During the spring term, the committee reviewed a proposal from the Center for Computational Science and Engineering, formerly the Center for Computational Engineering, to change the name of its computation for design and optimization master's program and degree to computational science and engineering. The intention behind the change is to align the name of the master's program with the name of the interdisciplinary PhD program and the new name of the center, both of which reflect strengthening engagement with the sciences at MIT as well as the nationally recognized computational science and engineering field. The committee approved the program and degree name change. The program name change became effective immediately, and the degree change will be effective as of September 2020.

The Office of the Vice Chancellor's Career Explorations Committee presented its work and findings. The working group recommended requiring career and professional development for all graduate students, with each department and program developing a model that makes sense for them. The working group also recommended establishing a "career exploration hub" and a student career exploration committee.

The committee also approved language changes to the nonresident status policy for hardship assistance, allowing students experiencing unexpected financial emergencies to be eligible to receive a graduate student short-term emergency grant or (for graduate students with children) a grant during the nonresident period, with eligibility determined for each application.

At a special June meeting, CGP considered a proposal to allow graduate programs to conduct interviews in lieu of the Test of English as a Foreign Language (TOEFL) or the International English Language Test during the COVID-19 disruption. The goal of the meeting was to develop clear, written standards across all graduate programs for those that will not require the TOEFL or other English proficiency testing during the 2020–2021 admissions cycle. The topic will require further background investigation and additional meetings for resolution.

Committee on the Library System

The Committee on the Library System is chaired by Roger Levy (Brain and Cognitive Sciences), with Tracy Gabridge as executive officer. The main themes of the work of CLS in AY2020 involved the MIT framework for negotiations with publishers, subsequent engagement with publishers, and rights and responsibilities around open science and scholarship. Subthemes included the Libraries' data privacy policy and the renovation of Hayden Library. The committee met four times in fall 2019 and five times during spring 2020.

The framework for negotiations was drafted during summer 2019, through collaborative efforts between MIT Libraries and CLS. Feedback on drafts was solicited from CLS's full membership, MIT's Open Access Task Force (OATF), Libraries staff, select members of the Libraries Visiting Committee, and members of the senior MIT administration.

At the September meeting, Libraries director Chris Bourg shared the framework, Libraries staff discussed implications of contract negotiation scenarios, and CLS members provided vital support in liaising with the larger MIT community on potential impacts. In October, CLS members expanded community outreach plans, drafting a piece for the November/December Faculty Newsletter and offering to hold information sessions with MIT departments. The final Framework for Publisher Contracts was released to the public on October 17, 2019.

In November, CLS processed feedback from the framework release and revised outreach materials. Based on recommendations from OATF, CLS members discussed the creation of principles around open science and scholarship. CLS also presented a motion at the monthly Institute Faculty meeting to add two postdocs to the committee membership.

In December, CLS reviewed and commented on a data privacy policy draft created in response to the MIT Audit Division's assessment of the Libraries user privacy systems. The vote on the CLS motion to add postdocs was held and passed on December 18, 2019. Xun Gong was welcomed to the committee in January. At that meeting, a discussion was held about time-sensitive publisher negotiations so that CLS could weigh in on whether contract parameters matched the framework.

In February, CLS members reviewed a revised draft of the data policy. The group began a high-level review of a process to ratify principles on rights and responsibilities for open science. In early March, the committee discussed a first draft of principles for open scholarship and was briefed on the Hayden renovation and on negotiations with scholarly publishers.

April's meeting began with an update on the Libraries in light of the pandemic. Afterward, guest Raym Crow, senior consultant at the Scholarly Publishing and Academic Resources Coalition, provided an overview of open access options, explaining relative merits of and problems with each. A robust discussion followed on how CLS can advocate for the framework's approach to open access within MIT and with external peers, including illustrating how the approach aligns with MIT's mission. In May CLS reviewed a new offer from Elsevier and, based on this discussion and the expertise of

the Libraries negotiation team, advised declining the offer, which did not align with the framework's principles. The committee discussed a communications plan around consequences of being out of contract with Elsevier.

Outside of committee meetings, CLS assisted in editing and then endorsed a response to the Office of Science and Technology Policy's request for information on public access to research.

CLS members extended an offer to all MIT departments, through the school deans, to hold information sessions on open access and negotiations with scholarly publishers, resulting in meetings with the following to date (a planned visit to Anthropology was rescheduled due to the pandemic):

Department of Mathematics

Department of Biology

Literature Section

Department of Aeronautics and Astronautics

History Section

Department of Chemical Engineering

Department of Physics

Since the announcement of ending negotiations with Elsevier, CLS has been involved in responses to community feedback; this outreach continues as of the present writing (end of June 2020). CLS remains ready to hold additional information sessions throughout the Institute on open access and negotiations with scholarly publishers. The COVID-19 pandemic illustrates why open access is vitally important, and CLS will continue focusing on this area, among its other duties. Work will also continue on creating principles on the rights and responsibilities of open science and engaging the community with them before ratification.

Committee on Nominations

The Committee on Nominations, chaired by Tomás Palacios with Tami Kaplan as staff person, performed the majority of its work from October to December. In late September, the committee conducted an annual survey of all faculty to identify service preferences for standing faculty and Institute committees. The committee contacted deans and committee chairs for suggestions, noting that some schools consider Institute service as a factor in promotions, and updated materials to share with prospective committee members and officers. The committee made 14 out-of-cycle (interim) appointments and nominated 32 faculty members for appointments beginning on July 1, 2020, with the slate including nominees from 13 academic units across all five schools and the Department of Athletics, Physical Education, and Recreation. The committee also led a process to nominate the next chair of the faculty to serve in 2020–2021 as chair-elect and from 2021 to 2023 as chair; Lily Tsai (Political Science) was nominated to serve in these roles. The slate was presented at the March Faculty meeting and unanimously adopted in May.

Committee on Student Life

The Committee on Student Life is chaired by Mark Bathe (Biological Engineering), with Judy Robinson as executive officer. CSL is concerned with the quality of the learning and living environment at MIT, with specific attention to issues of community. The committee is composed of an outstanding set of faculty, staff, and students from across the Institute, all deeply concerned with issues of student life.

Agenda

The focus of the year was to be on student well-being and wellness and campus climate. In the fall semester, discussion topics included mindfulness, self-compassion, and emotional intelligence. The spring semester began with a focus on campus climate, but the committee switched its focus to discuss MIT's COVID-19 response planning.

Guests

Over 30 MIT faculty members, administrators, and students were guests at CSL meetings during the year, including senior leaders, department heads, and student government leadership. Additionally, experts in the field of mindfulness met with the committee in the fall semester.

Discussion Topics

Mindfulness and Student Well-Being

The mental health of college students is a national issue that impacts the academic and campus experience. For this reason, CSL's major goal was to explore mindfulness and student well-being. The committee met with numerous thought leaders on this topic, with a specific focus on self-compassion, meditation, mindfulness, and emotional intelligence.

Student Life and Campus Climate

The spring semester involved discussions with the Graduate Student Families Working Group and the Career Exploration Committee, as well as a review and discussion of MIT's response to the *Report of the National Academies Committee on Women in Science, Engineering, and Medicine*. The committee also received an update from Vice President Mark DiVincenzo on the Goodwin Procter report on Jeffrey Epstein's involvement in the MIT community.

COVID-19 Emergency Response and Planning

The remainder of the spring semester focused on COVID-19. The committee received updates from the Division of Student Life, MIT Medical, and MIT Emergency Management on the Institute's pandemic response planning.

Committee on Student Life Recommendations

- Centralize and improve the visibility and accessibility of mental health and well-being resources for students. CSL reaffirms the importance of consolidating digital resources to facilitate greater visibility and usefulness to the student

community. It also sees value in distributed well-being and mental health offices and resources at the Stratton Student Center, for example, in addition to the remote and less readily accessible MIT Medical alone. Importantly, well-being resources at Stratton might also reduce stigma associated with MIT Medical, thereby lowering barriers for students in need to seek assistance along with being more convenient to the locations of dormitories and living groups.

- Take a leadership role in trying to address the nationwide growth in student mental health issues. The committee emphasized the importance of recognizing that student mental health is a nationwide problem of grand proportions. The committee feels that MIT should take the initiative of coordinating with peer institutions to explore the factors that contribute to this generational epidemic because responding to the problem clearly transcends what we can ever hope to accomplish as an individual institution.

- Broaden participation in well-being courses and activities beyond conventional physical education. Over the past few years, DAPER has expanded its physical education and wellness offerings to include fitness courses such as yoga, Pilates, cycling, kickboxing, and dance. The committee recommends that DAPER continue the trend of expanding and diversifying its more general fitness and wellness offerings. Offering well-being education or mindfulness education credits for nontraditional activities that benefit student mental health would be of great help to motivate students to engage in these important alternative forms of non-academic education and might be required units in place of some of the current physical education units.

- Invest in a new student wellness center to replace the Stratton Student Center. As recommended in the past, the committee continues to feel strongly that MIT should raise and invest the resources needed to renovate the center to bring it in line with other student wellness centers at our sister institutions.

Committee on Undergraduate Admissions and Financial Aid

The Committee on Undergraduate Admissions and Financial Aid is chaired by Raúl Radovitzky, with Stuart Schmill as executive officer. CUAFA met five times during AY2020 and worked on the following topics:

- Financial aid changes, smoothing out the $700 decrease in last year's financial aid to middle- and higher-income families

- A report on the benefits of student body racial diversity to MIT's educational goals

- Elimination of SAT Subject Tests as a requirement for admission

- Alternatives to the TOEFL requirement for applicants whose primary language is not English

- Consideration of the addition of an associate dean for student well-being

The sections below summarize the committee's deliberations and recommendations.

Financial Aid Changes

Over the past year, CUAFA recommended the following budget-neutral changes to the Enrollment Management Group (EMG):

- $2,000 start-up funds for first-year students with family incomes less than or equal to $65,000 ($450,000 per year cost)
- Covering health insurance for those students with family incomes less than or equal to $65,000 who are not otherwise covered on their parents' plans ($900,000 per year cost)
- Increasing the parental contribution for all families by $700 ($1.58 million per year savings after four years); note that even with this decrease in financial aid, we are still meeting more than full calculated need for families

In last year's report, we anticipated that these changes might have a positive impact on yield in the lowest-income family range and a negative impact for middle-income students and families, the group that already reports the most financial stress (per MIT and Consortium on Financing Higher Education peers). Both predictions have been realized.

To further optimize our financial aid packages, we considered rebalancing this situation with the cost-neutral changes shown in the table below.

Changes in Financial Aid Packages, AY2020

Income band	Parental contribution change amount (% of average contribution for income band)	Resulting parental contribution reduction amount (% of average contribution for income band)
$0–$150,000	-$200 (-2%)	$1,500 (18%)
$150,000–$200,000	No change (0%)	$1,300 (4%)
$200,000+	$650 (1%)	$650 (1%)

These changes reduce aid in income brackets above $200,000, do not alter it in the $150,000 to $200,000 range, and increase it in the $0 to $150,000 range. The changes were recommended to and accepted by EMG.

Report on the Benefits of Student Body Racial Diversity to MIT's Educational Goals

Last year, CUAFA initiated an analysis of the diversity study conducted by the Admissions Office. Background for the analysis included CUAFA's prior efforts to address this issue:

- Report on the benefits of student body racial diversity to MIT's educational goals (July 2013)
- Statement on the role of diversity in MIT's educational mission (October 2015)
- Recommendation to enhance collection of supporting data (2017–2018)

To better inform our decisions, the discussion and approval were postponed to this year because of the impending resolution of legal cases against other universities. The committee resumed the discussion this year and, after detailed analysis and deliberations, approved the report in its final form.

Elimination of SAT Subject Tests as a Requirement for Admission

Many peer institutions have eliminated SAT Subject Tests as a requirement for admission. After the California Institute of Technology and Harvey Mudd College eliminated the SAT requirement in January 2020, MIT was the only remaining institution with the requirement, and the committee felt a responsibility to discuss the possibility of eliminating it. After discussion that included a careful quantitative analysis, we brought the issue to a vote, and there was full consensus for making this recommendation. The new policy was officially announced on March 20, 2020. Based on information gathered by the Admissions Office, the tests do not contribute enough to academic assessments of science readiness in our cohort of applicants to outweigh the barriers they pose to students from low-income backgrounds and students of color, who are less likely to take the tests or attend schools that prepare them to take the tests. Science readiness is better evaluated via other requirements for admission. Also, moving forward, international students will no longer be able to substitute the TOEFL for the SAT: all applicants will be required to take the general SAT. It should be a priority to continue exploring robust ways to assess science aptitude and readiness.

Alternatives to the TOEFL Requirement for International Applicants

The committee discussed the background and rationale for considering adding alternatives to the TOEFL as a means of assessing English communication skills among non-native English-speaking applicants. All of our peers accept other options, including the International English Language Test and the Pearson Test of English. Cost is an important consideration. The committee discussed the various options along with their benefits and possible limitations. Although there was no convergence about specific alternatives to be accepted, there was a general consensus that this should be pursued.

Consideration of the Addition of an Associate Dean for Student Well-Being

Responding to a request from the vice chancellor, the committee discussed the possibility of adding an associate dean for student well-being. Although the benefits were acknowledged, CUAFA did not encourage it based on considerations of balance in the composition of the committee.

Committee on the Undergraduate Program

The Committee on the Undergraduate Program is chaired by Arthur Bahr (Literature), with Genevre Filiault as executive officer. During AY2020, CUP discussed a number of matters related to MIT's undergraduate educational programs, ultimately providing input on a range of issues that cut across faculty and institutional governance. The committee met on alternate weeks throughout the fall and spring terms.

Throughout the year, the committee discussed student behaviors and learning related to both phases of the CUP experiment to "enable opportunities for exploration in the first year," approved for AY2019 and AY2020. These discussions included all elements of the experiment: pass/no record grading for three science core subjects beyond the first semester, first-year credit limits, first-year discovery subjects, and early sophomore standing. The spring academic disruption caused by COVID-19 impacted spring semester student behaviors and grades. Therefore, the members agreed to extend parts

of the experiment for incoming first-year students in fall 2020 and to continue collecting and discussing relevant data.

During these discussions, the chair brought forth an idea informed by the CUP experiment to replace the existing sophomore exploratory and junior-senior P/D/F grading options with a flexible P/NR option; this idea was initially suggested by Professor Jesse Thaler (Physics), a member of the Committee on Curricula. Feedback on the proposal was solicited from members of the community and governance through meetings and faculty and student forums, with this input informing the final proposed policy. Under this grading option, approved by the Faculty during its meeting on May 13, 2020, students can elect to designate up to 48 units as P/NR after receiving their grade in a subject. There is no restriction regarding on which subjects or requirements this option can be used. The option will be available to students starting with incoming first-year students in fall 2020.

CUP also discussed and supported a change in name of the Physical Education Requirement, one of the General Institute Requirements, to the Physical Education and Wellness Requirement. The change was subsequently approved by Faculty vote.

Additionally, the committee consulted on other important topics in undergraduate education such as advising, student enrollment in subjects that meet concurrently, final assignments for subjects without final examinations, and several issues related to the spring academic disruption. David Randall (Student Support and Wellbeing) and Karen Singleton (MIT Medical) joined the committee for a discussion of student stress and well-being. In addition, CUP engaged in annual consultations with its Subcommittee on the Communication Requirement and Subcommittee on the HASS Requirement. Acronyms used by the CUP subcommittees include the following:

Humanities, Arts, and Social Sciences: HASS

HASS Humanities: HASS-H

HASS Arts: HASS-A

HASS Social Sciences: HASS-S

Communication Intensive in HASS: CI-H

Communication Intensive in the Major: CI-M

Subcommittee on the HASS Requirement

CUP's Subcommittee on the HASS Requirement is chaired by Professor Marah Gubar (Literature), with Patricia Fernandes as executive officer. During AY2020, the subcommittee met monthly and continued with its regular responsibilities related to the oversight of the HASS requirement.

SHR staff and the chair reviewed 91 student petitions for substitutions within the HASS requirement, of which 59 were for Harvard cross-registered subjects. SHR approved 26 new proposals for HASS subjects to count toward the HASS requirement: 13 for HASS-H, seven for HASS-S, and six for HASS-A. SHR also reviewed and approved a proposal for a new HASS concentration in education.

The subcommittee continued its annual review of how students are moving through the HASS requirement by looking at the class of 2019. The results continue to be consistent across each graduating class: for each cohort, close to 40% of students completed more than the required eight subjects, and on average students completed three HASS-H subjects, three HASS-S subjects, and two HASS-A subjects.

Beginning in AY2018 and continuing into AY2019, SHR conducted the first full review of HASS concentrations; the report was finalized in May 2019. This year, SHR began to distribute the report more broadly. The subcommittee also started to disseminate and highlight essential and best practices specifically and made plans for implementing report recommendations as appropriate. As part of this work, SHR presented its findings and recommendations to the undergraduate officers in November, as well as the Creative Arts Council in December. SHR plans to continue this work during AY2021.

Subcommittee on the Communication Requirement

CUP's Subcommittee on the Communication Requirement is co-chaired by Professors Adam Albright (Linguistics) and Michael Follows (Earth, Atmospheric and Planetary Sciences), with Kathleen MacArthur as executive officer. During AY2020, the subcommittee engaged in a number of activities in its oversight of the undergraduate Communication Requirement (CR) at MIT, including a review of the rate of student noncompliance with the pace of the CR and 123 student petitions. The subcommittee reviewed and approved proposals for five new CI subjects (four CI-M and one CI-H) and one substantially revised CI-M subject and made recommendations for changes to an existing CI-M subject with an atypical format. In addition, SOCR provided input to CUP on the potential implications for the CR of the flexible P/NR proposal.

The significant disruption related to COVID-19 required the subcommittee to devote a handful of meetings to discussing its implications for the CR. SOCR made the decision to maintain the use of Advanced Placement and International Baccalaureate scores in English to place incoming students in their first CI subject while acknowledging the changes these programs had to make in response to the pandemic. The subcommittee also decided to increase the length of the testing window for the first-year essay evaluation from seven days to 10 in order to accommodate possible additional barriers some students may face in accessing and completing the exam. Finally, SOCR provided guidance to the Committee on Academic Performance on assessing students who may have fallen behind the required pace of the CR in spring 2020 and on awarding degrees with deficiencies related to the CR.

Following the charge that SOCR set for itself at the end of AY2019 to encourage innovation in approaches to professional communication across the Institute, the subcommittee began to consider how visual communication could be incorporated into the CR. Although progress was interrupted by COVID-19, the subcommittee ended the year by outlining a plan to continue these discussions in AY2021.

Harold E. Edgerton Faculty Achievement Award Selection Committee

The Edgerton Award Selection Committee, chaired by Antoinette Schoar with Tami Kaplan as staff person, selected Alex K. Shalek, Pfizer-Laubach Career Development

Associate Professor of Chemistry, a core member of the Institute for Medical Engineering and Science (IMES), and an extramural member of the Koch Institute for Integrative Cancer Research, as the recipient of the 2019–2020 Harold E. Edgerton Faculty Achievement Award.

Professor Shalek received three degrees in chemical physics: a BA from Columbia University and AM and PhD degrees from Harvard University. After receiving his doctorate, he was a postdoctoral fellow at Harvard, MIT, and the Broad Institute of MIT and Harvard. Professor Shalek joined the MIT faculty in 2014 as an assistant professor in the Department of Chemistry and a core member of IMES. He was promoted to associate professor without tenure in 2019.

Professor Shalek is a leader in creating and implementing new methods, both experimental and computational, to study how cells collectively drive health and disease. He and his team work to make technology available to people, simplifying and economizing approaches to facilitate global and clinical utilization, and to deepen our understanding of human malignant, infectious, and inflammatory diseases. The insights developed through Professor Shalek's profiling methods are helping to both transform our understanding of the cellular basis of disease and inform therapeutic intervention strategies.

When Professor Shalek first came to MIT, he helped to develop a method called Drop-Seq that revolutionized single-cell analysis by allowing researchers to reproducibly recover the transcriptomes—the set of all RNA transcripts (information copied from a strand of DNA)—of thousands of single cells at minimal cost. Such unbiased single-cell profiling promised transformative opportunities to understand human health and disease, for example to identify malignant clones in cancer biopsies or the cellular targets of acute HIV infection in blood. To realize this potential, Professor Shalek and his team, in collaboration with Professor Chris Love's lab, subsequently reengineered this method, developing Seq-Well, an ultra-portable, low-cost single-cell RNA-sequencing technology that can profile the transcriptomes of thousands of cells from multiple clinical samples at once. This technology redefines what scientists around the world can learn from precious samples, enabling both basic and clinical research on a global scale.

Professor Shalek has obtained 18 patents since joining the MIT faculty, with another 15 pending. Over the same period, he has coauthored 66 papers, reviews, perspectives, and commentaries. Recognition for Professor Shalek's work includes a National Institutes of Health (NIH) New Innovator Award, a Sloan Research Fellowship in Chemistry, a Pew-Stewart Scholarship, a Beckman Young Investigator Award, and a Searle Scholarship. In 2019, he was selected as a voice who will guide the next 15 years of methods development by the journal *Nature Methods* and as one of the 25 voices who will guide the next 25 years of immunology by the journal *Immunity*.

Professor Shalek actively teaches and trains scientists and scientists-to-be around the world. The selection committee commends him on these critically important efforts to empower others. At MIT, he has designed a highly successful graduate subject that covers the biophysics behind genomic measurement techniques as well as their applications in medicine. At the undergraduate level, he has added to the established

curriculum by including examples inspired by modern research to illustrate the relevance of his lecture material and promote student engagement. He has been involved in significant curriculum development and education planning projects within the Department of Chemistry and IMES. His lab has participated in local events such as the Cambridge Science Festival, HubWeek, and Science on Saturday as well as engaging in outreach to middle and high schoolers.

Professor Shalek's service is exemplary, both internally and externally, and provides a clear picture of his interdisciplinary efforts across the Institute and beyond. In addition to serving as an advisor to first-year MIT undergraduates, Professor Shalek advises students in the Department of Chemistry, the Harvard-MIT Program in Health Sciences and Technology's Medical Engineering and Medical Physics (MEMP) PhD program, and the Harvard/MIT MD-PhD program. He has served on the graduate admissions committees of the Department of Chemistry, MEMP, Computational and Systems Biology, and the Harvard Medical School Immunology Program and the faculty search committees of the Department of Chemistry, IMES, and the Ragon Institute of MGH, MIT, and Harvard. In addition, he served a term on the Institute Committee on Prehealth Advising when he joined MIT as an assistant professor. Professor Shalek frequently serves as a reviewer for NIH grant panels and is a member of the Bill and Melinda Gates Foundation Collaboration for AIDS Vaccine Discovery and Collaboration for TB Vaccine Discovery. He is also involved in the Human Cell Atlas Project, serving as co-leader of its Equity Working Group. All of this is but a small sample of the broad range of service in which Professor Shalek is involved.

Continuing the legacy of Professor Harold E. Edgerton, this award honors achievement in research, teaching, and service by a non-tenured member of the faculty. The selection committee recognizes Professor Alex K. Shalek for his leadership and pioneering spirit; his vision, inventiveness, and enthusiasm for mentorship and collaboration; and his tremendous contributions to a critical area at the intersection of science and medicine.

James R. Killian Jr. Faculty Achievement Award Selection Committee

The Killian Award Selection Committee, chaired by Penny Chisholm with Tami Kaplan as staff person, selected Susan Solomon as the recipient of the 2020–2021 James R. Killian Jr. Faculty Achievement Award. Professor Solomon is the Lee and Geraldine Martin Professor of Environmental Studies in the Department of Earth, Atmospheric and Planetary Sciences; she holds a secondary appointment in the Department of Chemistry.

Professor Solomon joined the MIT faculty in 2012 following a highly distinguished 30-year career with the National Oceanic and Atmospheric Administration.

Each of the faculty who contributed to Professor Solomon's nomination commented that she is the embodiment of the MIT mission "to generate, disseminate, and preserve knowledge, and to work with others to bring this knowledge to bear on the world's great challenges." She is also the embodiment of the Institute's motto of *mens et manus* (mind and hand).

Professor Solomon is without peer in terms of both scientific contributions and leadership on the policy aspects of climate change. In her early career, her research was

central to understanding the causes of the reduction of atmospheric ozone over the Antarctic. More recently, she and her colleagues supplied evidence that the "ozone hole" is healing. Her research has also shown causal relationships between atmospheric CO_2 concentrations and rising sea levels and temperatures. Her paper on the long recovery time of CO_2 concentrations is central to all discussions of the long-term impacts of climate change. That is the *mens* side of her work. But she has not rested on these laurels alone. Her work provided much of the basis for the Montreal and Kyoto Protocols, designed to reduce human impacts on atmospheric ozone and greenhouse gases. In this way, as well as in her efforts to communicate science to diverse audiences, she has, quite literally, made the world better. This is her *manus* side.

Professor Solomon's educational vision is similarly based in *mens et manus* and the MIT mission. Grounded in strong basic science, her approach combines rigorous examination of the fundamentals with practice in engineering, policy, economics, and the history of science, making it accessible to nonscientists who control public policy and to the broader populace. She played a key role in the launch of the new undergraduate minor in environment and sustainability, an effort of the Environmental Solutions Initiative begun during her tenure as its founding director.

The recognition Professor Solomon has received for her work is beyond stellar. She was awarded our nation's highest honor in the sciences—the US National Medal of Science—in 1999, and in 2010 she received the Chevalier de la Légion d'honneur from the French government, an honor typically reserved for French citizens. In 2007, she and her colleagues on the Intergovernmental Panel on Climate Change shared the Nobel Peace Prize with Al Gore. Finally, in 2018, she was awarded the Crafoord Prize in Geosciences by the Royal Swedish Academy of Sciences and the Crafoord Foundation "for fundamental contributions to understanding the role of atmospheric trace gases in Earth's climate system." Professor Solomon has received even more awards and honors, more than can be recounted here, but we must include one of the most unusual and certainly the coolest, both figuratively and literally: in 1994, both Solomon Glacier (78°23′S, 162°30′E) and Solomon Saddle (78°23′S, 162°39′E) were named in honor of Professor Solomon's leadership in Antarctic research.

It is the selection committee's great pleasure to have this opportunity to honor Professor Susan Solomon for the inestimable value of the discoveries she has contributed to atmospheric science and for the inspiring example of her engagement and leadership in working toward real-world solutions to address the global climate crisis.

Rick L. Danheiser
Chair of the Faculty
A. C. Cope Professor of Chemistry

Tami Kaplan
Faculty Governance Administrator