February 21, 2018 Faculty Meeting: Summary Minutes

Summary

Professor Susan Silbey, Chair of the Faculty, chaired the meeting in the absence of President L. Rafael Reif. The agenda comprised three items:

- Annual Report on Tuition and Financial Aid
- Updates from the Committee on Sexual Misconduct Prevention and Response
- The MIT Intelligence Quest

A quorum was reached early in the meeting and the November minutes were approved.

1 Annual Report on Tuition and Financial Aid

Provost Martin Schmidt briefed the Faculty on planned upcoming changes in tuition and financial aid. By way of background, he first noted that MIT aims to maintain a tuition comparable to its peer group: Harvard, Yale, Princeton, and Stanford (HYPS). MIT's tuition is thus set such that cost should not be a deciding factor if a student is admitted to MIT and one of HYPS. Relative to HYPS, MIT's 2017-2018 tuition of $49,892 was between the lowest (Princeton: $47,212) and the highest (Yale: $51,400). Another important factor in the annual evaluation of tuition and financial aid is that MIT links undergraduate and graduate tuition, so when adjusting undergraduate tuition, it is also necessary to examine how changes that extend to graduate tuition affect competitiveness.

In 2016-2017, MIT's undergraduates received a total of $143.3 million in financial aid from all sources, both need- and merit-based. $108.5 million of this came from MIT scholarships, all of which are need-based. Approximately 57 percent of undergraduates received an MIT scholarship, with an average amount of $42,081, equivalent to 87 percent of tuition that year. Ninety percent of MIT's undergraduates receive some form of financial aid. Sixty percent receive need-based aid. Thirty-five percent do not pay tuition based on the financial aid they have been awarded.

The percentage of MIT graduates who take out student loans has been declining over the years, as well the debt they have incurred: twenty-nine percent of seniors graduating in 2017 had taken out student loans, with an average debt at graduation of $19,819. By way of comparison, 64 percent of seniors graduating in 2000 had taken out student loans, with an average debt at graduation of approximately $30,000. This trend is reflective of MIT's increased investments in financial aid. In recent years, MIT has increased its financial aid budget as follows: 4.3 percent (FY 2015); 5.4 percent (FY 2016); 11.7 percent (FY 2017); and 11.1 percent (FY 2018).

In 2018-2019, there will be a 3.9 percent increase in tuition, with an overall increase of 9.6 percent in the financial aid budget.

2 Updates from the Committee on Sexual Misconduct Prevention and Response

Professor David Singer (Political Science), Chair of the Committee on Sexual Misconduct

Prevention and Response (CSMPR), first reminded the Faculty that CSMPR was created in 2015 in response to the report of a task force on sexual assault, education, and prevention that had been charged by Chancellor Cynthia Barnhart in 2014. CSMPR's charge is to oversee an Institute-wide approach to preventing and responding to sexual misconduct and other forms of gender-based discrimination and to provide guidance to senior administration on relevant policy changes. Professor Singer then described both a newly required training program for faculty and staff on sexual misconduct policy including Title IX and other responsibilities, and the development and implementation of a new policy on consensual or romantic relationships in the workplace or academic environment at MIT.

After an extensive vetting process, CSMPR chose EVERFI Haven, one of the leading programs on the market, as MIT's training provider. The training explains Title IX responsibilities, the ethics and obligations of reporting processes, and intervention methods, providing helpful tools as to how to respond in a variety of situations.

Consensual romantic or sexual relationships that involve asymmetric authority raise concerns about exploitation, conflicts of interest, abuse of authority and unfair treatment and can also affect the broader environment, can affect our sense of the integrity of supervision and evaluation. CSMPR initiated the development of a policy on consensual relationships. The policy can be summarized straightforwardly: No one in the MIT community can have a sexual relationship with an undergraduate aside from another student. No one can have a sexual relationship with a graduate student if that person is or might reasonably be expected to be in a position of authority over that graduate student. Principal Investigators (PIs), managers, and supervisors are similarly prohibited from having relationships with individuals over whom they have authority, whether supervisory or academic. In the case of Massive Open Online Courses (MOOCs), relationships are prohibited when there is academic authority involved, such as when the instructor will be involved in grading a student's work and the student is seeking an academic credential or credit. The policy also provides some straightforward guidance about how to manage conflicts of interests should they arise.

Professor Duane Boning (EECS) asked how the training is being rolled out to students, and what the reception has been, at both undergraduate and graduate levels. Professor Singer responded that students already have separate mandatory training (also by EVERFI) that has been in place for a few years, most recently instituted for graduate students. His impression is that there has been a positive response from students.

Professor Anne McCants (History) expressed her appreciation that there is now a consensual relationships policy in place. She recommended that CSMPR explore how undergraduate TAs are being trained and consider recommending that formalized training be instituted for this group.

Professor Peter Fisher (Head, Physics) pointed out that inappropriate consensual cyber relationships are possible, and that a policy on such behavior might need to be articulated.

3 The MIT Intelligence Quest

Dean Anantha Chandrakasan (Engineering) and Dean Michael Sipser (Science) presented a new Institute-wide research initiative, the MIT Intelligence Quest (referred to during the meeting as the MIT IQ), which was announced on February 1, 2018, and launched on March 1, 2018.

Established in response to a charge from President L. Rafael Reif, as well as to faculty and student interest from around the Institute, the initiative focuses on human and machine intelligence, and their applications and impact on society, and relates to a number of existing research programs on campus, including: Computer Science and Artificial Intelligence Lab (CSAIL); Media Lab; Institute for Data, Science, and Society (IDSS); Center for Brains, Minds, and Machines (CBMM); Operations Research Center (ORC); Brain and Cognitive Sciences (BCS); Economics; and others. The MIT Intelligence Quest comprises two entities: the "Core", which will pioneer the science and engineering of intelligence at the intersection of cognitive science and neuroscience combined with computer science defined broadly, including data science; and the "Bridge", which will reach out to other disciplines around campus to apply intelligence technologies to different domains. Industry connections began with the MIT-IBM Watson AI Lab, which was announced in September 2017 and will serve as an important cornerstone for the initiative.

The Deans of all five Schools have been engaged in thinking through the initial development of the initiative, as well as leaders from the departments, labs, and centers mentioned above. There were also small focus group discussions held among 250 faculty selected for this purpose, and two faculty forums attended by over 100 faculty. In addition, faculty input is very welcome and is being sought out as the initiative further evolves.

The MIT Intelligence Quest is planning several grand challenges ("moonshots"), including human learning and how machines might produce intelligence. Funding brought in through the initiative will be distributed through open calls for proposals, to encourage faculty to collaborate and define their own challenge problems. Similar to the MIT Energy Initiative (MITEI), the MIT Intelligence Quest will award seed funding to attract subsequent NSF or DARPA support. The initiative will also support computing access and access to computer servers, UROP funding, and innovation activities.

Professor Joe Jacobson (Media Lab) indicated his excitement about the initiative, and expressed a wish for expanded computational resources, such as Graphic Processing Unit (GPU) clusters, referencing Project Athena (1983–1991), which brought computing to scale at MIT. Dean Chandrakasan responded that one might think of the Bridge as an Athena 2.0.

Professor Jesus del Alamo (EECS) also expressed his enthusiasm, but noted that it is important to leverage not only MIT's strengths in neuroscience and computer science, but also its strengths in new hardware and new technologies, pointing out that now is the time to explore the fundamental science and materials science that utilize concepts and technologies to enable future advances in artificial intelligence in ten years. Dean Chandrakasan agreed, commenting that MIT.nano should have an important AI component.

Ms. Sarah Goodman (President, Graduate Student Council) asked that the initiative address potential biases that can be inherent in AI research and technologies. She also asked how the initiative will address impacts of AI on the work of the future. Dean Chandrakasan responded that these are important topics and that he is working with Dean Melissa Nobles (SHASS), IDSS, CSAIL, and the Media Lab about ethics and related topics.

Professor John Leonard (Mechanical Engineering and CSAIL) agreed with Ms. Goodman about the importance of the initiative addressing diversity, inclusion, and future impact on society. He also indicated a concern about the organizational health of MIT with the proliferation of departments, labs, centers, and initiatives, stressing that much of MIT's strength comes from a simple bottom-up approach. Dean Chandrakasan responded that it is necessary to have a way to coordinate the many efforts around MIT that focus on AI. He referenced MITEI as an excellent model, providing an appealing overlay to bring in funding. The initiative can then distribute funds to individual researchers.

Professor Duane Boning (EECS) commented on the analogy to MITEI, point out that part of MITEI's impact has been the studies it has commissioned (e.g. The Future of Coal, The Future of Nuclear Power, etc.). Professor Boning wondered if the MIT Intelligence Quest might consider similarly impactful endeavors that could raise awareness, chart out directions, and perhaps set national directions for large-scale efforts. Dean Chandrakasan thanked Professor Boning for the excellent idea and said the initiative would consider developing such roadmaps and studies.

Professor Sanjoy Mitter (EECS) suggested that pure mathematics would play an important role, e.g. geometry and topology (and perhaps algebraic geometry) would be relevant in problems of perception and motion control. Dean Chandrakasan agreed.

Professor Susan Silbey (Anthropology and Sloan; Chair of the Faculty) noted that references to intelligence need to be applied more broadly to represent more faculty. She referred specifically to colleagues at MIT who do not define intelligence in the context of a machine or even of the brain, but who talk instead about mind, or those who talk about creativity and interpretation as part of intelligence. She asked Deans Chandrakasan and Sipser what processes they will put in place to ensure that these colleagues are part of the conversation, and that the variety of meanings of intelligence and mind be made welcome in the initiative. Professor Silbey also expressed a concern that ethics and public policy be one of the central foci of the initiative.

Professor Josh Tenenbaum (BCS) agreed that there is a distinction between studying the mind and studying the brain. He acknowledged that there are many at MIT who study mind in different contexts and who may not be in CBMM or BCS – including, for example, in the social sciences, the humanities, the Media Lab – and that it is very important that their perspectives, insights, and contributions can be made part of the initiative, by forming a larger collaborative group. Professor Tenenbaum also agreed with Professor Silbey regarding ethics and public policy, commenting that MIT can be a world leader in considering both artificial intelligence and a broader notion of what intelligence is about.

Dean Chandrakasan reiterated that he and Dean Nobles are aligned on the issue of ethics and will

work together to ensure that it does not become an afterthought. The initiative is considering the creation of faculty advisory groups to represent different viewpoints. The initiative leadership will also think carefully to ensure that the projects that get funded through the initiative are representative of the broader Institute scholarly community.

Dean Nobles agreed, underscoring the importance of including the social sciences, the humanities, and the arts as part of the process of developing the initiative. The political, social, and cultural dimensions and the human consequences are fundamental to the enterprise.

Professor Kenneth Manning (Comparative Media Studies/Writing) expressed grave concerns about the use of "IQ" as part of the name of the initiative, commenting on the negative history of the term "IQ". He referred to the late 19th and early 20th centuries, when the concept of "intelligence quotient" was used in an extremely discriminatory way, as a rationale for eugenics policies and more recently to justify blatant racism. He asked whether Dean Chandrakasan had considered this negative history and the visceral effect of the term "IQ" on a great number of people.

Professor Anne McCants (History) agreed that Professor Manning's point should be taken very seriously. Despite the fact that the initiative is about a "quest", not a "quotient", the immediate reaction and perception will be that it is "IQ" as previously and commonly used.

Professor McCants also commented on the importance of including a conversation about values as part of the initiative: the expressed goal of the initiative is to make the world better – but what does that mean, and could it be the case that the world is made better for some but not for all. Dean Chandrakasan agreed that this should be included in the discussion.

With no new business, the meeting was adjourned.

Respectfully submitted,

Professor W. Craig Carter
Secretary of the Faculty
March 6, 2018