

Report to the  
Faculty, Administration, Trustees, Students

of

**Massachusetts Institute of Technology**  
Cambridge, Massachusetts

by

An Evaluation Team representing the  
New England Commission of Higher Education

Prepared after study of the institution's  
self-evaluation report and a site visit  
September 22 – 25, 2019

Members of the team:

*Chairperson:* Dr. Jean-Lou Chameau, President Emeritus, California Institute of  
Technology

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This report represents the views of the evaluation committee as interpreted by the chairperson. Its content is based on the committee's evaluation of the institution with respect to the Commission's criteria for accreditation. It is a confidential document in which all comments are made in good faith. The report is prepared both as an educational service to the institution and to assist the Commission in making a decision about the institution's accreditation status.

**New England Commission of Higher Education  
Preface Page to the Team Report**

Please complete **during the team visit** and include with the report prepared by the visiting team

**Date form completed:**  9/17/2019

**Name of Institution:** MIT

**1. History:** Year chartered or authorized  1861  Year first degrees awarded  1868

**2. Type of control:**  State  City  Religious Group; specify: \_\_\_\_\_  
 Private, not-for-profit  Other; specify: \_\_\_\_\_  
 Proprietary

**3. Degree level:**  
 Associate  Baccalaureate  Masters  Professional  Doctorate

**4. Enrollment in Degree Programs:** (Use figures from fall semester of most recent year):

	Full-time	Part-time	FTE	Retention <sup>a</sup>	Graduation <sup>b</sup>	# Degrees <sup>c</sup>
<b>Associate</b>	n/ap	n/ap	n/ap	n/ap	n/ap	n/ap
<b>Baccalaureate</b>	4491	29	4501	98.6	95.4	1142
<b>Graduate</b>	6723	133	6767			2537

(a) full-time 1<sup>st</sup> to 2<sup>nd</sup> year (b) 3 or 6 year graduation rate (c) number of degrees awarded most recent year

**5. Student debt:**

	Most Recent Year	One Year Prior	Two Years Prior
<b>Three-year Cohort Default Rate</b>	0.6% (2016, draft)	1% (2015)	0.9% (2014)
<b>Three-year Loan Repayment Rate</b>	91.82% (2017)	91.84% (2016)	92.33% (2015)

	Associate	Baccalaureate	Graduate
<b>Average % of graduates leaving with debt</b>	n/ap	27%	12%
<b>Average amount of debt for graduates</b>	n/ap	\$22K	\$67K

**6. Number of current faculty:** Full-time  1055  Part-time  14  FTE  1060

**7. Current fund data for most recently completed fiscal year:** (Specify year:  2019 )  
(Double click in any cell to enter spreadsheet. Enter dollars in millions, e.g., \$1,456,200 = \$1.456)

Revenues		Expenditures	
Tuition	\$383.736	Instruction	\$1,208.376
Gov't Appropriations	\$1,481.940	Research	\$1,733.379
Gifts/Grants/Endowment	\$1,631.864	General	\$617.099
Auxiliary Enterprises	\$138.132	Auxiliary Enterprises	\$151.943
Other	\$296.251	Other	\$0.000
<b>Total</b>	<b>\$3,931.922</b>	<b>Total</b>	<b>\$3,710.797</b>

**8. Number of off-campus locations:**  
In-state \_\_\_\_\_ Other U.S. \_\_\_\_\_ International \_\_\_\_\_ Total  0

**9. Number of degrees and certificates offered electronically:**  
Programs offered entirely on-line  0  Programs offered 50-99% on-line  0

**10. Is instruction offered through a contractual relationship?**  
 No  Yes Specify program(s): \_\_\_\_\_

## *Introduction*

The team appointed by the New England Commission of Higher Education (NECHE) visited the Massachusetts Institute of Technology (MIT) on September 22 - 25, 2019. Prior to the visit, the team had held a conference call on September 8 to prepare for and finalize the agenda for the visit. In addition, the chair of the team conducted a preliminary visit of the MIT campus in March 2019. Our team included individuals very familiar with MIT while others, although familiar with the institution, had limited prior exposure to it until their involvement in this accreditation review.

A detailed agenda for the visit is included as an appendix to this report. Meetings were conducted on a one-on-one basis and in small groups with representatives and leaders from all areas of MIT including faculty, students, and staff. Meetings were also held with members of the Executive Committee of the Corporation, including the Chair of the Corporation, and a group of alumni.

The MIT leadership, faculty, staff, and entire community are to be commended for the quality of the materials provided to the team as well as the openness and quality of the discussions during the visit. The pride and commitment to the institution and the excellence and values it represents were apparent in all these discussions.

The Institutional Self-Study Report, numerous additional reports, publications and links provided in the virtual workroom, and the discussions during the site visit provided the basis for the information and evaluative judgments contained in the nine sections of this report which address the Standards for Accreditation of the New England Commission of Higher Education.

This evaluation of MIT is a comprehensive evaluation following the 2009 evaluation and an interim report submitted and accepted in 2014.

At the time of the site visit, MIT was experiencing challenges related to a highly publicized situation with a former donor. The topic came up at several occasions during the site visit and the impressions of the team will be included in the Summary section of this report.

### *1. Mission and Purposes*

MIT's mission statement has not changed since the previous accreditation cycle and remains well-defined and ambitious: *to advance knowledge and educate students in science, technology and other areas of scholarship that will best serve the nation and the world in the 21st century.*

A commitment to application and using knowledge and discovery to solve problems as well as to experiential and experimental learning is ingrained in the MIT culture and its educational and research programs. Serving the nation and the world and applying

technology to the betterment of society are reflected in the programs and culture of the institution.

To support this mission, MIT provides its students with a flexible curriculum with a superb base in science and engineering enhanced by the arts and humanities and social sciences that provide a global perspective, as well as leadership skills and service. Numerous opportunities exist for discovery and experiential and experimental learning.

MIT's motto, *mens et manus* (mind and hand), captures the mission of MIT and its commitment to the two qualities of theory and practice. It is worth noting that in recent years MIT has emphasized that a third quality, the heart, is also critical. It appears in a new initiative, Mind-Hand-Heart, focused on the health and well-being of the MIT community.

To assure that its programs respond to new challenges and opportunities and remain true to the mission of the institution, MIT undertakes regular reviews and evaluations of its activities through a robust system of visiting committees (seven programs and departments were evaluated in 2019 and eight more will be evaluated in 2020), various standing and *ad hoc* committees, and major task forces such as the study completed in 2014 on the Future of MIT Education.

## 2. *Planning and Evaluation*

Based on the institutional self-study and confirmed through meetings with the campus community and a review of the exhibits provide by MIT, the accreditation team finds that MIT maintains rigorous, systematic, and comprehensive planning and evaluation activities.

**Planning:** As described in the self-study: “although MIT as an institution has no single strategic plan, a commitment to the process of strategic planning is woven into the Institute’s fabric” (page 6 of the Self Study).

With a bottom-up budgeting process and more than 120 years of experience with the system of Visiting Committees, the heart and foundation of the institute’s planning process is at the department level.

The MIT Corporation maintains thirty-one Visiting Committees, standing committees of the Corporation typically comprising seventeen members that undertake department evaluations across the institute every two years. There are Visiting Committees corresponding to nearly all of MIT’s twenty-two individual academic departments, as well as for the Libraries, the offices of the Chancellor (including the Vice Chancellor for Undergraduate and Graduate Education and the Vice President and Dean of Student Life), Sponsored Research, and the Department of Athletics, Physical Education, and Recreation. The biennial process includes a departmental self-study and an analysis of statistical trends over the last decade. In addition, the Visiting Committees meet separately with constituent groups including faculty, postdocs, undergraduate and graduate students.

At a local level, the self-study reports prepared for the Visiting Committees provides departments an opportunity for review and reflection, and the committees provide appraisal, advice, and insight to the departments. In themselves, these are important outcomes. But there are larger impacts at the institutional level in at least two ways. First, the Visiting Committees—each chaired by a member of the Corporation—provide the membership of the Corporation with an on-the-ground view of the inner workings, issues and cultures of MIT’s academic departments and programs. Second, the Visiting Committee reports are read by members of the Corporation, reviewed at the Corporation’s quarterly meetings, and are shared widely across institutional leadership. By reading across reports and following Visiting Committee reports over time, issues that transcend departments are identified. Examples of such issues that have emerged in recent years include deferred maintenance and its impact on research activity and the rise of computing as an area of intersection with disciplines across the institute—an observation that has led to the formation of the new Schwarzman College of Computing. Academic departments seem to have a great deal of independence, but they are clearly connected through the Visiting Committee process and results.

As in academic planning, financial planning at MIT includes elements that are both “bottom-up” and “top-down.” As a foundation for the annual budget process, senior leadership engages in dialogue and analyses regarding the broad parameters that will pertain for the next academic year, including the endowment payout, expected changes in tuition revenue net of financial aid, the plan for faculty and staff salary improvements, and funding that may be earmarked for new initiatives. This planning is thorough, systematic, and designed to ensure that MIT has the capacity to weather economic downturns. Once these broad parameters are established, they are communicated down to the deans and vice presidents as budgetary guidelines. Meanwhile, departments prepare budget requests that are communicated up to the deans and vice presidents. The result of MIT’s processes and overall financial discipline appears to be consistent and predictable budgets that shield the academic enterprise from the vicissitudes of the market.

***Evaluation:*** It is clear from the self-study document, materials provided to the team, and discussions during our visit that the Institute has a well-developed culture of assessment supported by a strong Office of Institutional Research serving the Provost’s office and academic departments. The office collects data through a comprehensive survey research program and analyzes survey data in addition to—and in combination with—data from a variety of institutional information systems, such as the student registration system, the human resources data system, and the research administration data system. The reports prepared by Institutional Research are viewed as authoritative and accurate. Reports from Institutional Research are systematically pushed out at the level of academic departments and are an integral part of the information prepared for and digested by the Visiting Committees.

Institutional Research has made considerable efforts to support requests for data and analyses that emerge from various student constituencies and has positioned itself as a consulting service for student groups constructing surveys of their own design. Institutional

Research is also beginning to engage in more qualitative work to supplement their quantitative focus.

### 3. Organization and Governance

**Governing Board:** Since its founding in 1861, the Massachusetts Institute of Technology has been headed by a President in partnership with the Corporation. The Corporation is the stated and recognized governing body and MIT's bylaws clearly delineate the composition, duties and responsibilities of the Corporation members and its officers. The bylaws allow for engagement of students through five trustee slots reserved for recent graduates and meetings with students through designated committees. There is substantial interaction with the faculty through the Visiting Committee structure.

The governing board (The Corporation) is large, consisting of 78 voting members who meet four times a year for 1.5 days. To ensure maximum effectiveness, the Corporation draws its membership from leaders in science, engineering, industry, education, and public service. Roughly  $\frac{3}{4}$  of the members of the corporation are MIT alumni. The Corporation delegates to its committees most of the fiduciary oversight of MIT. An executive committee of the board, which currently comprises eight members, is charged with "responsibility for overseeing the general administration and superintendence of all matters relating to the Institute" and is the Corporation's principal governance committee, including oversight of the functions of the MIT Investment Management Company board. The Executive committee meets every month during the academic year and on an *ad hoc* basis as needed.

The Corporation's Visiting Committee structure allows the governing board to understand and influence the academic mission and goals of the institution with greater clarity and specificity than is typical for most research universities. The Visiting Committees are comprised of approximately one-third corporation members, one-third alumni and one-third academic peers. Bi-annually they review department and unit strategic goals and objectives, meet with students, staff, postdocs and faculty, address progress since the last review, and discuss issues as well as changes in programs. At the conclusion of a Visiting Committee review, the results are shared with both the Corporation and the Institute's leadership for comment and implementation. In 2013, the Corporation completed a comprehensive review of their bylaws which led to the full Corporation unanimously approving changes to the bylaws including expansion of the scope of the audit committee to include risk assessments, the establishment of a Development Committee, and the inclusion of term limits for the Executive Committee of the Corporation.

In 2016 the Executive Committee underwent a rigorous self-study process led by an outside consultant. This resulted in the establishment of a Governance and Nomination Subcommittee of the Executive Committee with the responsibility of assessing the performance of the Executive Committee. These changes to the bylaws and to the working of the Executive Committee have improved the functioning of the Corporation.

Two important functions of the Corporation are risk assessment and the evaluation of the President/CEO. Risk assessment is undertaken by the Risk and Audit Subcommittee of the

Corporation. The process is rigorous with an annual prioritization of the top risks for the year, who owns them and tracking of progress. The evaluation of the President is done annually. The President provides a detailed self-evaluation to the Executive Committee followed by an in-depth discussion. The Executive Committee then meets without the President to consider his performance and communicate any areas for improvement that they observe.

***Internal Governance:*** The senior leadership team has undergone a number of changes since the new President started in 2012. For example, there is now a Vice Chancellor for Undergraduate and Graduate Education (replacing separate Deans for Undergraduate and Graduate Education), a Vice President for Open Learning, an Institute Community and Equity Officer (the position was vacant during the team visit), and a Chancellor for Academic Advancement. These changes demonstrate an organizational structure that is flexible and responsive to the changing needs of the community and the changing external demands on the institution.

In 2019 MIT announced its most significant restructuring in nearly 70 years with the creation of the Schwarzman College of Computing. Much about the College has not yet been defined and five working groups of faculty, students, and staff recently submitted reports to help shape the college's design. It is too soon to evaluate its impact or effectiveness and this new college should be the focus of the interim report to the commission.

MIT strives to have a deeply participatory culture of community engagement working on issues of importance. The template at MIT is to create committees around major issues and then engage broadly within the institution. Reports are often posted to solicit input from alumni in addition to faculty and students. In addition, the President has weekly meetings with the academic and administrative leadership and meets with department heads three times per semester.

Examples of this participatory culture in action include the process to create the Schwarzman College of Computing, which engaged hundreds of faculty members, the steps taken to review the General Institute Requirements and the process that led to the current experiment being conducted on the first-year pass/no-record grading experiment.

While the efforts are very earnest, MIT is sufficiently multi-layered and complex that it can be hard to engage and communicate in a way that reaches everyone. Internal communication is an area where there is always room to improve.

#### *4. Academic Programs*

The Massachusetts Institute of Technology offers a broad range of graduate and undergraduate degree programs, with a particularly strong emphasis on programs in the natural sciences and technology. It offers 55 bachelor's degrees, 9 engineer's degrees, 50 master's degrees, and 104 doctoral degrees. The engineer's degree provides more advanced and broader exposure to engineering than a master's degree, but includes less emphasis on research than a doctoral degree. Of these, 5 bachelor's degrees, 6 master's degrees, and 11 doctoral degrees are interdisciplinary and offered across one or more of its five schools. Based on its review of

academic program goals and requirements in catalogs and supporting documents, as well as discussions with academic deans, the team found MIT's academic programs to be clear and coherent, with standards of achievement appropriate to the degrees awarded. In addition, through its OpenCourseWare and MITx initiatives, MIT is committed to sharing many of the rich educational experiences available to its students with students around the world, and its three new MicroMasters programs provide an accelerated pathway to advanced degrees for highly qualified students who successfully complete specified massively open online courses (MOOCs) on MITx.

***Undergraduate Programs:*** Students are admitted to MIT, not to schools or departments, and all first-year undergraduate students begin without a major. At the conclusion of the first year, students may choose any major without any additional requirements or admission procedures. MIT has continued to innovate and develop new undergraduate majors, many of which are joint programs, reflecting current trends and student interest. Between 2009 and spring 2019, the MIT faculty approved 13 new undergraduate majors, compared to six between 1999 and 2009. Five of the 13 new majors are joint majors offered by two departments that represent new areas of study that have emerged at the intersections of disciplines; in four of these, Electrical Engineering and Computer Science (EECS) is one of the departments. The new programs jointly offered with EECS are Computer Science and Molecular Biology; Computer Science, Economics, and Data Science; Urban Science and Planning with Computer Science; and Computation and Cognition.

Three of the new undergraduate degree programs—in Aeronautics and Astronautics, Chemical Engineering, and Nuclear Science and Engineering—are designed to offer undergraduates flexibility within the context of a particular discipline. The redesigned Management majors (Course 15) also offers students flexibility by replacing the SB (Bachelor of Science) in Management Science with three distinct SB programs: Business Analytics, Finance, and Management (a more general foundation of business subjects for student exploration). This increased flexibility taps well into the heterogeneity of student interests and areas for application.

The new College of Computing promises to build on the interdisciplinary nature of the university by combining advances in computing and artificial intelligence with the growing knowledge of other disciplines in nearly every field represented at MIT. Although the college is still taking shape, students should have the opportunity to develop important computing skills, including applied artificial intelligence and other technical skills and ways of thinking, and combine them with what they learn in their major area of study.

Electrical Engineering and Computer Science (Course 6) continues to be a popular program with MIT students. The number of undergraduates majoring in Course 6 almost doubled (counting single majors) from 601 in fall 2009 to 1,148 in fall 2018—a shift that is especially pronounced in Course 6-3, Computer Science and Engineering, whose single majors increased from 217 in fall 2009 to 733 in fall 2018. The number of single majors in Course 6-2, Electrical Engineering and Computer Science, increased more modestly, from 288 in fall 2009 to 357 in fall 2018; those in Course 6-1, Electrical Science and Engineering, declined from 96 in fall 2009 to 58 in fall 2018.

Many undergraduates who had not identified EECS as their planned major when they applied to MIT ended up majoring in it, contributing in part to the creation of a Study Group on Undergraduate Majors Selection. In a broad sense, the study group was tasked with exploring and analyzing trends in undergraduate major selection and enrollments at MIT. Specifically, the study group was given the assignment to examine the contributing factors, both internal to MIT and external, for the shifts; the effects and implications for MIT's students, faculty, and the Institute as a whole; and the ways in which MIT's departments, schools, programs, and offices have responded. The work of the study group is in progress, but its deliverables will include cataloging initiatives underway, sharing best practices, and imagining possible actions for the future. These are all extremely worthwhile outcomes which can help to shape the portfolio of majors in the years to come.

The same dichotomy observed in new undergraduate majors—expanding with an interdisciplinary focus in some areas, and a narrowing focus in others—can be found in new minors as well. Minors consist of five to seven subjects, with a typical program comprising six. A student may earn no more than two minors. The objective of a minor is to provide a depth of understanding and expertise in an area outside of, or complementary to, a student's major. MIT has launched 12 new minors since 2009, five of the interdisciplinary variety, compared to eight total new minors during the decade prior. Several—including polymers and soft matter—have more of a niche focus than MIT's minors have traditionally seen.

Research plays an important role in the undergraduate experience, and students can find research opportunities in a number of different ways. For example, by the time of graduation, 91% of undergraduates will participate in at least one undergraduate research experience through the Undergraduate Research Opportunities Program (UROP). Administered by the Office of Experiential Learning (OEL), UROP offers opportunities for undergraduate students to engage with faculty as junior colleagues in the research enterprise. UROP provides undergraduate students an opportunity to gain practical experience by working alongside faculty and senior researchers in every MIT department, as well as in interdisciplinary labs and centers, to develop project plans, write proposals, conduct research, analyze data, and present and publish results.

Towards this goal, the OEL provides support by:

- Offering workshops focused on finding UROPs within specific departments and disciplines;
- Partnering with the Office of Minority Education to advertise UROP programming, offering targeted sessions for participants in the Interphase Edge and Laureates & Leaders, programs that support MIT's underrepresented minority students;
- Hosting a UROP open house during orientation to promote networking; and
- Offering a four-day First-year Pre-Orientation Program (FPOP) called Discover UROP, which exposes incoming first-year students to research projects by giving them opportunities to tour labs, hear directly from faculty, network with researchers, and meet other undergraduates engaged in research at MIT.

Additionally, SuperUROP is a year-long research program open to juniors and seniors in the School of Engineering and the School of Humanities, Arts, and Social Sciences. Through SuperUROP, students select a research project and conduct background research; explore current

research topics in their degree field; learn industry-strength design methodologies; write research papers that undergo peer review; and present their research to various stakeholders. The program gives students the time, training, resources, and guidance they need to pursue deep scientific and engineering inquiry, and provides access to graduate-level facilities. It includes a two-semester course on undergraduate research and at least 10 hours a week in the lab. These year-long projects often evolve into graduate theses, startup plans, or industry positions.

MIT International Science and Technology Initiatives (MISTI) offers students research opportunities with global implications. More generally, MISTI's timely mission provides much value to students and the university. Specifically, MISTI works with MIT students, faculty, and international partners and sponsors to build strong intercultural connections, advance research with global implications, and help students develop as leaders. The immersive program allows students to hone practical intercultural skills through hands-on experience working alongside international colleagues. To prepare for their experiences abroad, MISTI students must complete coursework in the language, culture, history, and politics of their host country, and participate in a series of location-specific training modules covering topics that include cross-cultural communication, current events, technology and innovation in the host country, navigating the workplace, logistics, and safety. MISTI's 27 country programs span all continents and engage more than 1,100 students per year.

Meetings with students during the visit provided evidence of the many ways that MIT supports student learning and growth beyond the classroom. The MISTI program and the UROP program are two examples praised by students. Students also praised the "pop-up" courses during the January term (short courses, many not for academic credit) where students could explore areas outside their majors for the pure joy of learning.

***Integrity in the Award of Academic Credit:*** MIT makes explicit the expected engaged academic time in the description of each course, thereby communicating expectations much more clearly (for both students and faculty) than the standard approach focused on seat time with an assumed two-to-one ratio of work outside class to in class.

MIT defines engaged academic time in three dimensions for all courses: lecture or time in class, time in lab, and time working outside of the classroom on preparation or homework. For example, the expectation for Calculus is 5-0-7, indicating 5 hours in class (lectures), no associated lab, and 7 hours of work per week outside of class. This is a 12-unit course with 12 hours of engaged academic time per week for the semester. An experimental biology course has expectation 4-8-6, indicating 4 hours per week in lecture, 8 hours in lab, and 6 more hours in study outside class and lab. This course carries 18 MIT units.

In a 15-week semester (including an exam period), a 12-unit course (such as Calculus) then specifies 180 hours of engaged academic time for Calculus. Under the federal definition of the credit hour, this is the required engaged academic time for a 4 credit-hour course. The 18-unit experimental biology course requires the engaged academic time of 6 standard credits.

In the end, MIT courses meet or exceed the engaged academic time required by federal regulation and NECHE standards. The MIT system has the advantage of communicating clearly the amount and type of academic effort associated with all courses at MIT.

**General Education:** MIT's General Institute Requirements (GIRs) develop foundational knowledge in science and mathematics as well as significant breadth in the Humanities, Arts, and Social Sciences (HASS). The requirement includes 17 subjects (think courses) in a student's undergraduate program:

- 6 subjects in Mathematics and Science;
- 8 subjects in the Humanities, Arts, and Social Science;
- 2 subjects in restricted electives;
- 1 lab requirement.

The units associate with subjects satisfying this requirement vary, but almost all of the courses carry 12 MIT units (equivalent to 4 standard semester credits) so the requirement translates to an equivalent of 68 standard credits (well above the 40 credits required by the NECHE Standards).

The six subjects in the Sciences must include two in mathematics, one in Chemistry, two in Physics, and one in Biology. For the eight subjects required to meet the HASS requirement, two must be designated as Communication Intensive. Students are also required to complete two communication intensive courses in their major area of study, so the undergraduate programs place a clear and strong emphasis on developing communication skills for all majors.

Experimentation plays an important role in informing faculty conversation about the future of the GIRs. In the summer of 2018, the Vice Chancellor proposed to the Committee on the Undergraduate Program an experiment designed to assess the strengths and weaknesses of options for enabling greater exploration of fields and majors during the first year. The experiment builds on the inputs from a few sources—the June 2018 faculty workshop, described in Standard 3 of the Self-Study; the spring 2018 Designing the First Year Experience class, described in Standard 6 of the Self-Study; and the Study Group on Undergraduate Majors Selection, mentioned above. Although the study group's work was ongoing at the time the Committee on the Undergraduate Program approved the experiment, its findings provided great insight into the paths students take when choosing a major and the changes they say would have improved the process. Notably, the experiment builds on the working group's finding that 77% of 2017 first-year undergraduate students believed that the pass/no record option would improve the major selection process.

**Graduate Degree Programs:** The Massachusetts Institute of Technology offers world-class graduate and advanced study programs in many different fields across its five schools (50 master's degrees and 104 doctoral degrees), and more than half of the 11,466 students enrolled at MIT in Fall 2018 were graduate students (2838 master's students, 3942 doctoral students). The degree of interdisciplinary graduate education is impressive, with 6 master's degrees and 11 doctoral degrees being offered across more than one school. The founding of the Schwarzman College of Computing, which began operation in September 2019, seems likely to further broaden the interconnections among disciplines at MIT. When combined with the explosion of computational research methods across all fields of inquiry, the new College may help MIT not only to enhance the education of its own graduate students and but also to continue its global

leadership in graduate education, providing innovative approaches to graduate education that will be widely emulated.

The self-study identified two significant structural changes in graduate education since 2009: (1) creation of the MIT Sloan Executive MBA (EMBA) and (2) the creation of blended master's programs, the MITx MicroMasters program. The EMBA program is a 20-month program intended for mid-career students that opened graduate-level education to full-time professionals. MIT's EMBA began operations in fall 2010, and it appears to have been very successful, gaining the top ranking among US-based business schools (and the number 10 ranking overall) in the 2018 ranking of executive MBA programs by the Financial Times. The MicroMasters program began in fall 2015, building on the exceptionally strong online presence that MIT developed through MITx, where it offers massively open online courses (MOOCs) to learners around the world. In addition to providing non-degreed professional credentials for learners who pass evaluations equivalent to (in many cases identical to) those provided to on-campus MIT students, learners with appropriate credentials through MITx may be considered for admission to one of three master's degree programs, and additional programs are developing similar options. If admitted, students who began their studies in a MOOC are awarded substantial course credit (up to five courses in a 10-course masters program) in areas corresponding to the MOOCs they completed, substantially reducing in-residence time to degree. Because completion of a MOOC requires performance similar to that in on-campus courses, MIT maintains the quality and rigor associated with its degrees. MIT's MicroMasters program may also broaden access to advanced degrees for learners whose circumstances might prevent them from pursuing a full-time residential master's degree. Initial comparisons of performance between fully residential and MicroMasters students in the final semester of their studies indicates that MicroMasters students perform as well or better than those in the fully residential program.

The self-study also identifies one significant administrative change affecting graduate education. In 2017, the Office of the Dean for Undergraduate Education and the Office of the Dean for Graduate Education were integrated under a newly created position of Vice Chancellor for Undergraduate and Graduate Education. Prior to the reorganization, the Office for Graduate Education served as the focus for support of the graduate student community, including both support for individual students and support for personal and professional development to the entire graduate community. Offices reporting to the Dean of Undergraduate Education (including the Career Advising & Professional Development Office, the Office of Experiential Learning, and the Office of Minority Education) were primarily focused on support for undergraduates. Following the reorganization, these offices appear to have enhanced their support for graduate students. While graduate students were initially skeptical of the change, a 360-degree evaluation of the Vice Chancellor after about six months suggests that graduate students have found the changes to be beneficial.

Faculty with whom the visiting team met expressed concerns about the high cost associated with supporting graduate students at MIT. There is the impression that well-established senior faculty have left MIT for other institutions, in part because the cost of supporting graduate students at other similar institutions was as much as 50 percent lower than at MIT. In addition, faculty with whom the team met expressed concern that individual faculty were expected to cover tuition costs not covered by the institutional allowance associated with Graduate Research Fellowships

from the National Science Foundation, perhaps with help from their department or school. These concerns are consistent with those included in a draft report from a group of faculty, staff, and graduate students charged by the Provost in 2016 with assessing graduate education at MIT. According to the self-study, that report specifically identified as significant obstacles both the lack of reduced tuition charges for advanced graduate students and the requirement that individual faculty, departments, or schools provide funds for students supported on national fellowships to make up the shortfall between institutional allowances and actual costs. Particularly given the continued concern the team heard, this remains an issue for MIT to address.

There are 6,972 graduate students, 700 of whom serve as teaching assistants at any time. The number of graduate and post-doctoral students have grown significantly in recent years.

Successful graduate programs, and especially successful PhD programs, cannot exist except where graduate students are trained by highly qualified, research active faculty and the visiting team has absolutely no reservations about the qualification of faculty involved in graduate education at MIT. As befits its status as one of the world's leading research universities (#5 in the world in the most recent *Times Higher Education* ranking of world universities), faculty at MIT are exceptionally well-qualified. Indeed, nine current members of the MIT faculty are Nobel laureates, and many others are recognized as world leaders within their field of study. While research expenditures capture only a portion of the scholarly and creative activity at any university, it is notable that with only a little more than 1000 full-time tenured or tenure-track faculty, MIT's annual research expenditures were \$731.5M in FY 2018.

The visiting committee did identify one potential barrier to enhancing research: the requirement that all projects pay the full indirect cost rate even when external sponsors set explicit limits on these cost recovery rates. While the system of department and school cost-sharing with the Institute seems to allow such projects to proceed, it may be worthwhile to consider whether substituting a waiver process would enhance incentives for scholars in fields where support comes primarily from private philanthropy or private foundations.

Many MIT faculty and graduate students are engaged in research sponsored by commercial enterprises, and the Institute appears to have appropriate procedures in place to protect the intellectual integrity of student work. In particular, MIT ensures that any non-disclosure agreements allow students to publish their work and to present a full public defense of their work when their dissertation is complete. The procedures also allow an exception for short delays in publication when necessary to protect intellectual property rights associated with a pending or expected patent application.

## 5. Students

In academic year 2018, 11,466 students were enrolled at MIT. Of the 4,547 undergraduate students, 4,510 were enrolled full time; of the 6,919 graduate students, 6,671 were enrolled full time, with undergraduate and graduate enrollment cohorts that have remained relatively stable over the last decade. With the 2019 opening of the Stephen A. Schwarzman College of

Computing, MIT expects that the Institute's population of graduate students will naturally grow with the addition of 50 new faculty positions although the impact on undergraduate enrollment is presently unclear.

***Undergraduate Admissions and Financial Aid:*** At the undergraduate level, MIT's stated mission is to enroll "a talented and diverse undergraduate student body composed of some of the world's most intelligent and creative individuals" who are interested in an education centered on science and technology, add to a vibrant campus community, and will become the "leaders and innovators of our global society." Further, the Institute indicates that it upholds "a commitment to meritocracy and fair access to our admissions process for students from all backgrounds" and, therefore, MIT reviews all applicants on an individual basis, rather than through peer comparisons such as a geographic region or particular high school.

Data provided by the Institute indicate that for entry year 2019, MIT offered admission to 1,427 first-year undergraduate students from a pool of 21,312 applicants (a rate of 6.7%), with more than 78% of those offered admission choosing to enroll, the highest yield in the Institute's history. Of those who enrolled in 2019, the mean SAT evidence-based reading and writing score was 745, and the mean SAT mathematics score was 789. The Self-Study also indicates that the first-year undergraduate class was 48% female.

Over the last decade, MIT has taken important steps to strengthen its commitment to undergraduate need-blind admissions and sought ways to increase access for students, especially those from underrepresented backgrounds. For example, in 2015, the Institute reaffirmed its commitment to a diverse student body as critical to the Institute's educational mission. The Self-Study states that 64% of its undergraduate population is students of color (identified in whole or part as African American, Asian American, Latinx, or Native American).

The Institute is one of only five schools in the "Ivy Plus" group in the United States that practice need-blind admissions and provide need-based financial aid and that meets the full demonstrated need of every admitted undergraduate student. Since 2015, MIT has markedly strengthened its commitment to affordability and financial aid. For example, MIT will commit \$136.3 million for financial aid in academic year 2020 and the net cost for an average MIT student receiving need-based aid will be \$22,500, a 29% reduction compared to 2000, when the net cost was \$31,860 when converted to current year dollars. In academic year 2018, MIT provided more than 58% of enrolled undergraduates with need-based financial aid.

The Institute also has focused on student debt reduction. For example, the number of seniors graduating with debt has dropped from 511 (49%) in 2008 to 297 (28%) in 2018. The median debt (in constant 2018 dollars) for those who borrow also has fallen slightly from \$15,188 in 2008 to \$14,840 in 2018.

***Graduate Admissions and Financial Aid:*** MIT graduate admissions are led by the academic departments. The Office of Graduate Education (OGE) helps coordinate student outreach, recruitment, admissions, and retention and facilitates or administers several initiatives that increase the Institute's ability to attract graduate students with a particular focus on underrepresented and underserved populations.

In 1998, after a report publicly acknowledged longstanding gender inequity in the faculty, MIT mounted robust efforts at ameliorating gender inequity and promoting the access of female, URM (under-represented minority) scholars, and first generation/low-income, students to MIT. The institute's leadership in areas of faculty and student diversity and inclusion made a profound impact on, and served as a model for, institutions of higher education across the country.

In 2015, with support from the Alfred P. Sloan Foundation, MIT established a University Center of Exemplary Mentoring (UCEM), which engages four departments in MIT's School of Engineering— Biological Engineering, Chemical Engineering, Electrical Engineering and Computer Science, and Mechanical Engineering—to effectively promote the recruitment, retention, and professional development of URM graduate students. The OGE also distributes funds for nine-month Diversity Tuition Fellowships to departments to enhance the recruitment of URM applicants. In fiscal year 2018, this fellowship program provided support totaling \$3.2 million for 60 students studying in 23 MIT departments and programs.

These and other recruitment and admissions initiatives have borne fruit, as over the last decade the number of URM students applying to, admitted to, and enrolled in MIT's graduate programs has increased significantly. For example, the number of URM students enrolled in the graduate program increased by 68% between 2008 and 2018.

MIT has also increased support to graduate students with families and to students with disabilities. For example, in fall 2018, MIT implemented a new graduate student parental leave policy for all graduate students who become parents, making birth and non-birth parents eligible for one month of parental leave. The Student Disability Services Office, integrated with the Assistive Technology and Usability Lab in 2018, has shown dramatic increases in utilization and now sees about 500 students per year.

***Student Services and Co-Curricular Experiences:*** In February 2017, the Dean for Student Life invited all enrolled students to provide feedback on their MIT experience. Designed with input from students, faculty, and staff, the survey covered a wide range of topics, including satisfaction with academic and non-academic experiences; health and wellness; campus climate; and usage of student resources. The survey, which is administered every four years, provides the Institute with the opportunity for periodic self-examination and reflection by hearing directly from the students.

Key survey findings include the following:

- 91% of students reported being somewhat or very satisfied (92% for undergraduates; 90% for graduate students) with their experience at MIT.
- Despite the rigors of an MIT education, students noted that they felt self-driven and motivated to work through academic pressures. When asked the extent to which they agreed or disagreed with the statement, “Even if I feel overwhelmed by my academic workload, I can rise to the challenge,” 83% somewhat or strongly agreed.
- 91% of undergraduates participated in at least one Undergraduate Research Opportunity Project, more than 50% will engage in a meaningful global opportunity, and 83% will participate in at least one internship.

MIT has taken a number of steps to understand and respond to increasingly complex student health and well-being issues. In October 2016, MIT hired a new chief of Student Mental Health and Counseling and associate medical director at MIT Medical who specializes in multicultural psychology and trauma. MIT Medical also hired three clinicians with expertise in race-based trauma. That same year, MIT appointed a new dean of student support and well-being and realigned key student support services to create the Coordination, Assistance, Response, and Education (CARE) Team that serves as a critical safety net for students experiencing crisis, connecting them and their families with support resources. MIT also added a module called “Student Support” to the MIT Mobile app. The Student Support module provides contact information for 24/7 emergency support services, links to non-emergency resources, and an “I need help with...” feature with options for specific scenarios.

The Institute states, however, that the most compelling initiative it has taken to address student mental health issues in recent years is the launch of a substantial, Institute-wide initiative called Mind-Hand-Heart (MHH), announced in September 2015. MHH is a coalition of students, faculty, and staff which leverages four primary channels to help make MIT’s *cor* (heart) as central to its mission as *mens et manus* (mind and hand): (1) an Innovation Fund to seed initiatives that advance novel approaches to well-being; (2) a volunteer coalition that engages the community in problem-solving activities to promote mental health and wellness; (3) the identification and nurturing of strategic partnerships in departments, labs, centers, and administrative offices to enhance mental health, wellness, and community-building programming across campus; and (4) Department Support Project (DSP) that links data with action aimed at improving the workplace climate. In academic years 2017 and 2018, MHH sponsored 160 community events that engaged more than 6,000 MIT community members on issues including resiliency, self-care, life skills, and diversity and inclusion.

At the same time, MIT’s Title IX and Bias Response and Violence Prevention and Response offices have added education, prevention, community outreach, and investigatory specialists to their teams, enabling the Institute to educate more people about how to prevent sexual misconduct and how to respond effectively when incidents occur. MIT, too, has implemented a number of important changes to its policies and procedures around sexual misconduct including requiring all incoming students to complete online training about how to define sexual misconduct, how to prevent it, and how to help someone affected by it. MIT is also considering the recommendations of a report of the National Academies of Sciences, Engineering, and Medicine on the sexual harassment of women in academia that found that between 20% and 50% of female students and more than 50% of female faculty and staff experienced sexually harassing behavior while in academia. In response, President Reif has established a presidential advisory board of senior leaders and four working groups of faculty, students, postdoctoral scholars, and staff to respond to the report’s recommendations.

MIT has also developed a Resident Peer Mentor (RPM) program, a peer-to-peer support effort that engages first-year students in targeted mentorship by trained upper-level students. Since its inception in 2016, RPM has grown from a pilot of four residence halls to include nine communities reaching nearly 900 students. In 2012, MIT introduced assistant directors for undergraduate residential life/area directors (ADs) to all undergraduate residence halls.

While addressing the complex issues of mental health and sexual misconduct takes time, early feedback suggests the Institute’s efforts are having an impact. According to the 2017 MIT Student Quality of Life Survey—administered to all MIT students, with 45% of undergraduates and 39% of graduate students responding—79% of respondents reported knowing where to go if they need professional help for their mental or emotional health. In 2015, 80% of undergraduates who responded to the Undergraduate Enrolled Student Survey agreed with the statement “Students at MIT treat one another with respect.” In the 2017 Student Quality of Life Survey, nearly 90% of undergraduates and graduate students who responded agreed with the statement.

MIT athletics also play an important role in a student’s experience. Approximately 25% of undergraduates participate in varsity athletics, and MIT student athletes have earned 295 Academic All-America citations, the most for any Division III program in the nation.

MIT has made a significant investment in the physical spaces where students live, work, and play outside of academic learning spaces. In fall 2016, MIT began a six-month design process for New House, and renovation began at the end of the spring 2017 semester. MIT has also begun planning the design and construction of a new undergraduate residence hall on Vassar Street. Currently under construction, this new west campus residence will serve as home to 450 undergraduate residents. MIT has also converted a former warehouse adjacent to campus into a home for theater and performing arts and in fall 2018 announced plans to build a state-of-the-art music facility to meet the current and future needs of the music program. Taken together, the theater and performing arts and music projects reflect the Institute’s commitment to the arts as an “integral mode of exploration and discovery.”

MIT has acknowledged challenges related to housing selection for first-year students. The Corporation, through the Division of Student Life Visiting Committee, as well as students, faculty, staff, and parents have expressed concerns with the current process of room assignment. There has also been controversy surrounding decisions to close one of the undergraduate residence halls because of legal, health, and academic performance issues. The self-study and discussions with faculty and staff and students indicate that there are still concerns among the community and the administration is actively working to promote open dialogue leading to positive change.

Of particular note, the trends in the local real estate market have limited the availability of affordable off-campus housing options close to campus. This development has directly affected graduate students, leading to increased demand for on-campus housing options. In spring 2013, the Provost charged the faculty-led *ad hoc* Graduate Housing Working Group to assess MIT’s graduate student housing needs and offer recommendations to meet them. In advance of the report’s release, Institute leadership determined that MIT’s Kendall Square Initiative—described in Standard 7—could accommodate half that figure through a graduate residential tower (now known as “Site 4”) currently under construction with 454 units of graduate student housing.

In response to the Commission’s feedback following MIT’s last comprehensive review, the Institute has assessed student dining, food accessibility, and food insecurity. In spring 2016, a Dining Data Review Working Group of students and staff was formed to examine data from a

number of sources, including student surveys and focus groups. Data revealed a need to increase flexibility and options and improve quality without substantially increasing cost, while preserving the dining program's positive aspects of student-staff connections and opportunities for socializing and community building. At this time, the Division of Student Life (DSL) is working to establish a visiting committee-type structure as a way to introduce an annual assessment of MIT's dining program by external dining directors, chefs, and administrators that will benchmark performance on the National Association of College and University Food Services standards.

In response to data showing that 2% to 8% of MIT graduate students and as many as 13% of undergraduates surveyed do not have enough to eat, the Institute established the Food Insecurity Solutions Working Group in 2017 to explore options to ensure that every MIT student is food secure and a number of steps have since been implemented to address this complex problem.

In his 2012 inaugural address, President Reif promulgated the foundational tenets of his presidency to including the following: *"I will lead MIT to continue to make significant contributions in the area of race and diversity, equity and inclusion ... We must find new ways to make sure that everyone who earns a place here can feel — as so many of us already do — that MIT is their home."* Progress towards this principled work over the seven years is palpable at MIT. Yet, members of the student community, with courage and passion, agree both that "In terms of creating a true culture of inclusion, MIT remains a work in progress."

## 6. Teaching, Learning, and Scholarship

Blessed with one of the strongest research faculties and most talented student bodies in the world, MIT chose to focus its response to Standard 6 primarily on its significant achievements in undergraduate and graduate learning and advising. It is optimally positioned to be in the forefront of many emerging technologies in not only creating, but in teaching new knowledge. In his 2013 presidential charge to rethink learning, President Reif described "an institution passionately committed to the kind of hands-on, team-focused, apprenticeship education that depends on community and human contact." MIT's response to Standard 6 indicates that President Reif's charge was embraced and that MIT is making substantial innovations in education, not only within the Institute but also for those accessing its resources worldwide through its Open Learning initiatives. To the extent that these innovations can scale down to institutions less favorably endowed or are transportable to individual platforms, MIT is a teaching laboratory for both higher and personal education. This potential is increased significantly with the Stephen A. Schwarzman College of Computing that promises to help develop cutting-edge collaborative teaching and learning.

There are 1047 full-time faculty and 1105 part-time or adjunct. Faculty lines are fully supported by the Institute, making the Institute especially attractive to scientists (used to a model where they must fund part of their academic year salary through grants). Faculty remains "top-heavy", with only 166 assistant professors currently. The Institute largely develops faculty talent from within: 82% of tenured faculty are hired at the junior level, and with significant tenure density, there is little opportunity for significant change in faculty

composition. Despite a robust endowment and growing operating budget, there is still “slot constraint” in that, with the exception of the Schwarzman College, no new lines are anticipated. Schwarzman might provide opportunities for more rapid increase in diversity of the faculty.

Faculty are recruited and evaluated by standard processes and, despite there being five separate schools within the Institute, faculty responsibilities for teaching, advisement, research, and governance are common throughout. There are frequent campus-wide committees and task forces on the largest issues, and their findings are quickly made public. Deans grant substantial autonomy to their academic units through department heads. The tenure process is standardized throughout the five schools and faculty have significant control over personnel issues.

MIT supports faculty research, through both sabbaticals and release time from external funding, and enables collaborative and interdepartmental work through the Office of Sponsored Programs, the Research Council, and the Office of Resource Development. MIT is gradually adding more corporate-funded research to its portfolio of federally-funded research, allowing for greater flexibility and transference of central funds to under-supported areas, including the Humanities. Faculty are permitted to work one day per week on non-Institute duties (such as paid consulting), and these commitments are monitored by the appropriate dean.

In the 2010 report on diversity, then-Provost Reif observed that “many of the findings in this study fall short of our aspirations.” Since then, female faculty has increased from 20 to 23% and URM faculty has gone from 6 to 8%. A new associate vice provost position was created in May 2019 to support efforts in increasing diversity and inclusion. The Institute Community and Equity Office was created in 2013 and a new associate provost was added in 2019 to increase the focus on efforts to improve equity and inclusion.

MIT is well-known for supporting interdisciplinarity research. Major centers include: the MIT Energy Initiative, the David H. Koch Institute for Integrative Cancer Research, the Institute for Medical Engineering and Science, the Environmental Solutions Initiative, and the Institute for Data, Systems, and Society. These connect multiple departments and industrial partners.

The Report of the Task Force on the Future of MIT Education mapped a number of major innovations in digital education. One result is the enormously successful open-access edX, by which millions world-wide have accessed courses. Residential MITx uses materials developed for online courses to support courses on the MIT campus. MITx materials have been used by virtually every MIT undergraduate student in their regular coursework. For example, the technology developed for automatic grading in MITx courses is being used to provide problem sets in real-time grading and immediate feedback. Faculty are developing a blended learning environment, in which technical skills are developed through Residential MITx, saving class time for deeper learning. Including scientists and other academics from across the Institute, the Digital Learning Lab convenes regularly and is the engine for digital

pedagogical innovation. Best teaching practices are developed and shared through the MIT Teaching + Learning Laboratory evaluations (discussed in Standard 8).

Reflecting MIT's effort for reimagining education, *Designing the First Year* is a broadly interdisciplinary course that develops new approaches to studying the social and intellectual transition from high school, with an emphasis on the application of learning to the practice of life and career. The class continues this fall and includes a focus on design thinking and offers MIT students an opportunity to propose options for change to MIT educational programs.

Undergraduate advising is done primarily by faculty and supported by upper class students who also deliver programs designed to improve academic life skills during for first-year students. Beginning this year, MIT is piloting the addition of staff support to help students navigate non-academic aspects such as registration and connecting to student activities. Faculty and associate advisors are trained centrally and there are mechanisms to reassign advisees in the event of mismatches. After semester three at the latest, advising shifts to faculty in the student's major. Undergraduate advising is evaluated by department, not at the individual advisor level.

Surveys indicate that graduate students are less favorably disposed to their advising than they are to the overall intellectual experience. Institute response has been vigorous, including best practices publications, honoring outstanding graduate advisors, and in some cases providing bridge funding for students to switch advisors. But more work remains to improving graduate advising. The 700 graduate teaching assistants are trained, but evaluation of TAs is done only as part of the overall evaluation of the course and not separately.

The Office of Experiential Learning oversees programs within and outside the classroom, actively assessing and assuring the efficacy of programs involving undergraduate research, global education, and public service. Nearly all (91%) undergraduates work directly with individual faculty mentors in the Undergraduate Research Opportunities Program (UROP—discussed in Standard 4 and Standard 8). In 2012, MIT created SuperUROP, year-long individual projects (with a maximum of three students per advisor) that encourage undergraduate students to pursue research at the professional level. Approximately 125 students/year participate in this program, which carries its own assessment mechanisms.

Notably, MIT International Science and Technology Initiatives (MISTI) encourages undergraduate and graduate students to study language, history, politics, and culture in any of 27 countries while simultaneously working in paired workplaces there. Approximately one-half of all undergraduates now participate in the MISTI program. Each MISTI program has at least one faculty advisor to assure academic quality. MIT Beaver Works Center offers learning through project-based and engineering design collaborations—often capstone experiences—between students and faculty at Lincoln Laboratory and, more recently, on campus. Currently focused mainly on engineering projects, Beaver Works is expanding into disaster relief and environmental projects.

The experiential initiative that MIT believes has the greatest potential is its currently piloting New Engineering Education Transformation (NEET) program. Created to span departments and disciplines, NEET recognizes 5 “threads” (Advanced Materials Machines, Autonomous Machines, Digital Cities, Living Machines, and Renewable Energy Machines) to prepare self-learning graduates who will need to adopt to the rapid changes in engineering design and practice. Assessment includes evaluation of technical, social, and cognitive outcomes. Enrollment is robust, with 131 in its first two years, making it the fourth largest cohort at MIT.

In the face of rapid change, some faculty expressed concerns that MIT was moving from research in and the teaching of basic science to more “disruptive technologies.” Accordingly, they felt MIT should resist the desire of undergraduates to have a pre-professional education and to instead maintain the common intellectual experience of undergraduates. It is possible that some of the co-curricular educational modules, such as MISTI, might serve to strengthen faculty-student ties and increase interest in less popular fields.

MIT’s self-study recognized goals identified by the comprehensive review of 2009 and 2014 interim report year. For Standard 6 they include: “Continue to assess institutional effectiveness, especially as it relates to educational innovation and student learning outcomes,” “Identify and implement priorities from the Task Force on the Future of MIT Education,” and “Continue to achieve its goals for the diversity of faculty and staff” (pp. vii-viii of the Self Study). MIT has addressed each of these. What is especially commendable is how vigorously MIT is scanning the future to reinvent itself in its fundamental research initiatives and how essentially it has integrated those initiatives into its classrooms.

## *7. Institutional Resources*

***Financial Resources:*** MIT is a large research university with access to significant resources. On an operating budget of \$3.6b, the institution generated a surplus of \$49m in the fiscal year ended June 30, 2018. This is the tenth year in a row of operating surpluses. These surpluses are held as operating reserves both centrally and at the unit level. Over the same time period the value of the endowment has grown from \$7.88b to \$16.4b primarily driven by extraordinary returns. The increasing distribution from the endowment as well as tuition increases provide for incremental resources which are distributed by the office of the Executive Vice President and Treasurer (EVPT) and the Provost through an annual budgeting process. This process, which was outlined in discussions with leadership of the finance and provost offices, defines the incremental funding available each year to support both salary increase and new programs, with a bottom up presentation of department and unit needs prioritized at the VP and Provost levels. Long term financial modeling based on incremental expenses, new priorities and scenarios for revenue are maintained by the EVPT office. Annual audits are completed and financial statement published by mid-September.

The funding streams which support the operations at MIT are diverse and balanced. Over the time period from 1981 to 2018, the reliance on external funding for research has decreased from

56% to 26% while the funding provided from the endowment has increased from 9% to 31%. Tuition has remained a steady 13% to 14% of the revenue stream for MIT. Staffing levels at the Institute have increased 7% over the four years of data presented in the data sheets, driven by increases in research staff and management and administrative staff, while total operating expenditures increased 15% for that period. Total student head count increased only 2% during that same period. The opening of the new college of computing will add 50 new faculty lines, the first such increase in many years, requiring a significant allocation of new resources.

In 2016 MIT announced the official launch of the MIT Campaign for a Better World and by the end of calendar year 2018 \$4.96b of the \$6b goal had been achieved. The inflow of these funds along with the already sizable endowment will support major programmatic and capital improvement into the future. In the self-study report, and supported by conversations with members of the corporation and the institute senior leadership, the process of departmental analysis by the Visiting Committees and careful review of the committee findings by leadership illustrated how this process informs strategic direction and investment of institutional resources.

Although not referenced explicitly in the self-study report, the visiting team's tour of the Kendall Square initiative highlighted the significant impact that development has had and will have on the financial resources of the institute. The addition of real estate assets in the areas surrounding the campus over a long period of time created the opportunity, in a booming real estate market, to support both the mission of the institute and significantly add to its financial resources. The development of a diverse ecosystem of new, developing and established technology-based businesses that partner with the university and support student and faculty efforts has created a rich environment for academic and entrepreneurial activity. The financial returns of the Kendall Square Initiative are shared between the endowment and the working capital of the institute and represent an opportunity for greater than \$100m annual returns to MIT when the vision is fully implemented. Included in this vision is additional housing for graduate students, support for affordable housing and community amenities and parking and transit solutions.

***Campus facilities and physical environment:*** As evidenced by the list of new buildings and major renovations provided in the data sheets, financial resources are being invested in facilities to support both the educational and research missions of the institute. Of the 7.9m assignable square feet of space in the MIT inventory, 2.3m square feet or 29% is new or has been significantly refurbished in the past 10 years. Another 1.6m square feet is scheduled to come on-line new or refurbished in the next five years. In response to the recommendation from the institutional review in 2008, while the institute undertook a review of deferred maintenance and in 2016 began to make progress toward reducing that amount, there is still a sizable deferred maintenance balance of \$1.5b. Based on a presentation to University leadership in April of 2019 shared with the visiting team, at the current pace of investment it will be 2030 before the deferred maintenance balance is at the target which the institute has set based on a review of best practices and peer institutions. There is a robust centralized process in place that reviews all capital projects, both repair and maintenance and new construction and determines priorities based on an established framework.

In April 2018, the Provost and the EVPT released the Campus Sustainability Task Force report. A subsequent design forum engaged the community in shaping the implementation plan. Several

initiatives have already been undertaken including investments in the Summit Farms solar plant, refurbishment of the Institute's co-generation energy plant, and increased subsidies for use of public transportation.

***Human Resources:*** Faculty and staff levels have increased only modestly at the Institute over the four most recent years as provided in the data sheets. This is consistent with the student numbers and MIT funding of the faculty lines. Both faculty and staff headcount will increase with the implementation of the new Schwarzman College of Computing. As was noted in the self-study there is significant competition for people with the talent and training to fill these positions. In an effort to attract the best talent, MIT conducts an annual market analysis to determine competitive pay for all benchmark jobs and has undertaken an initiative to create a unified salary structure across the Institute.

Comprehensive policies related to benefits, work conditions, and relations and responsibilities within the MIT community are posted on the MIT website. In addition, the Institute conducts a work-life survey every four years and maintains a Council on Staff Diversity and Inclusion which provide input, advice and recommendations to senior leadership.

***Information and technology resources:*** Both the libraries and information technologies areas have experienced significant change over the past 5 years. Guided by the *ad hoc* Task Force on the Future of Libraries, the Institute is seeking to reconceive the research library as an open, global platform. A number of activities are underway to address this vision including upgrades to the technology infrastructure, design of a renovation for the Hayden Library and new collaboration spaces across campus. The task force also urged MIT to review and strengthen the MIT Faculty Open Access policy which it has done.

The Information Governance Committee that reports to the Provost and EVPT sets priorities for IT investments and guides creation of policies, guidelines and standards. Over the past decade MIT has widely adopted cloud solutions while focusing on data integrity and security, disaster planning and recovery and increased redundancy.

## ***8. Educational Effectiveness***

It is widely accepted that MIT is an outstanding institution known for its rigorous and relevant educational programs. MIT graduates are respected for their academic accomplishments. Graduates are in high demand by industry and institutions of higher learning. MIT graduates have gone on to assume leadership positions throughout the country and the world. All of these factors are implicit evidence that MIT is effective in its educational programs.

MIT states that it has a goal of providing its students with the "finest education on the planet." As may be expected from a research-focused institution, MIT capably performs extensive research on its own performance with respect to delivery of the academic programs. The Institution takes a serious data-driven approach to monitoring and improving its overall effectiveness.

Through information presented in the self-study and through conversations held during the site visit, it is obvious that the maturity and pervasiveness of outcome assessment at MIT has markedly improved since the 2009 accreditation visit. MIT has more vigorously focused on outcome assessment, both for the curricular and co-curricular programs, and this has led to changes that have improved the overall effectiveness of MIT's education offerings. Even so, as will be noted later, there is still room for additional improvement.

Learning experts (e.g. in the Teaching + Learning Laboratory (TLL)) and institutional researchers aid and inform the faculty about how well students are learning in their courses and subjects. For example, the TLL regularly responds to requests from individual instructors or departments to provide focused assessment projects. Examples of several reports produced through this process were made available to the visiting team. Recent Institute-wide assessment efforts have focused on initiatives to enhance the first-year undergraduate experience, improving graduate and undergraduate advising, and needs for professional development for graduate students. To complement these efforts, the Institutional Research (IR) office provides research and analytical support services to the provost, the academic departments and schools, and individual research centers and laboratories. The IR office maintains an open website which provides useful information to the campus community.

MIT's self-study details how it studies educational effectiveness at four levels as indicated below.

***Educational effectiveness at the Institute level:*** MIT routinely tracks a number of traditional outcome statistics such as graduation rate, student debt upon graduation, and employment rates, etc. MIT's first-year retention rate (according to information submitted through IPEDS) for students pursuing a bachelor's degree is 99%, with a six-year graduation rate of 94%, a 3% increase since 2015. These are high values, and the recent improvement in the six-year retention rate is evidence that MIT has provided the academic and support services that enable its students to succeed. A reduction in student debt, and an increase in average starting salary for graduates at all degree levels also point toward the Institution's effectiveness. MIT also monitors alumni satisfaction with their preparedness for succeeding in their careers. High degrees of satisfactions (e.g. 85% for undergraduates who went on to graduate study, 81% for undergraduate who pursued employment opportunities) are typically reported.

***Educational effectiveness at the school and department levels:*** The Visiting Committees play a strong role in promoting effectiveness at the department and school level. Departments complete self-studies in advance of visiting committee meetings, with IR compiling longitudinal data on student assessments and outcomes for each department that include comparison data about other units as well as data from surveys (senior surveys, climate surveys, enrolled student surveys, and graduate student exit surveys). Various student outcome data are also provided. Examples of some of this information was made available through the E-series forms. Through the biennial visiting committee meetings, each department is held accountable for implementing changes to improve its educational effectiveness. The maintenance of ABET accreditation is evidence of educational effectiveness for the undergraduate engineering programs.

To facilitate assessment at the department level, IR has created an online platform that allows departments across the Institute to collect and consolidate student learning outcomes and related assessment data. When assessment shows that attainment of particular learning outcome drops below a target value, the instructor is asked to consider what changes to the curriculum or pedagogy might be appropriate to improve effectiveness. Information on this assessment platform was provided in the virtual workroom. While it is not clear how widely this platform is used at MIT, its availability is evidence of the Institution's interest and investment in educational effectiveness.

***Educational effectiveness at the program level:*** MIT makes efforts to improve learning outcomes outside of the academic programs as well. The self-study and workroom documents show that assessment is being performed to ensure the educational effectiveness of undergraduate research programs, student life programs, and international education.

Goals for the undergraduate research program are articulated in the self-study as part of Standard Six. To assess the achievement of these goals, student experience surveys are conducted to understand the reasons students participate in the program, the extent to which students feel prepared for their research experience, and student self-assessment of achieving program outcomes. These surveys help program leadership identify areas for improvement. As detailed in the self-study, a number of programs to improve access and preparedness have been implemented.

MIT also performed an assessment of its global education program, MIT International Science and Technology Initiatives (MISTI) described in Standard Six. With the assistance from TLL, MISTI faculty and program directors created surveys to determine the extent to which students appreciated their development in areas related to program learning goals and competencies. These include: language proficiency, awareness of social, political and professional aspects of the host country, and adaptability to new cultures and situations. Assessment data helped the MISTI program measure the effectiveness of its internship program and document the students' perception of their achievement of learning goals.

Information about the robust assessment activities within the Division of Student Life (DSL) was presented in the self-study, the workroom documents, and also directly from DSL staff members during the site visit. A shared understanding of learning outcomes for the DSL are currently used to guide design of student services and programs. The one-year-long process that led to these learning outcomes widely engaged DSL staff, and led to the identification of six domains of learning: advancing knowledge; cognitive complexity; self-awareness and development; interpersonal and engagement; and community, civic, and global engagement. Input from the faculty was solicited during this process. These learning outcomes are being rolled out across the division during the current academic year.

***Educational effectiveness at the subject level:*** The self-study reports that MIT does not practice a systematic approach to subject-level assessment. Instead, it relies on the individual faculty members and departments to take responsibility for educational effectiveness of the students' learning within individual subjects. End-of-semester subject evaluations are performed, and this provides one way for students to provide input on the quality of teaching and learning

experienced. In addition, various student surveys (e.g. the Enrolled Student Survey) are performed periodically to obtain indirect evidence of students' perception of their learning.

The self-study also presents some evidence of recent focused efforts to improve outcome assessment in selected courses (e.g., in Biological Engineering and Mathematics). However, it was not clear that similar efforts to improve assessment in subjects is occurring across the institution.

***Areas deserving additional attention:*** While significant improvements in assessing and advancing educational effectiveness have been achieved at MIT over the past decade, there is still room for improvement to reach the levels of assessment proficiency that NECHE envisions. Some specific areas for additional attention are the following:

- Pages 25-27 of the NECHE E-forms provide a table of websites that are labeled as pointing to learning outcomes by course for the undergraduate programs. With a few exceptions (e.g., for the programs covered by ABET accreditation), these websites do not provide statements of learning objectives (which have measurable outcomes) but instead are simply high-level descriptions of the programs. Interviews with members of the MIT staff during the site visit confirmed that there are not clear statements of learning outcomes for all programs. Staff members also reported that in some cases, the assessment data now being collected is “not being utilized well.”
- There does not yet appear to be robust assessment of the learning outcomes for the General Institute Requirements.
- There does not appear to be any central oversight of outcome assessment activities. In addition, there does not appear to be coordination of outcome assessment practices across the institution, or the sharing of best practices across departments.
- In addition to identifying learning outcomes by course (major) and developing assessment plans, it would be appropriate for MIT to establish targets for student achievements of each learning outcome as a metric of the effectiveness of its educational programs.
- Data from the NECHE E-forms indicate a wide variability in student satisfaction with the quality of academic advising, teaching, and their student life experience. For example, for the PhD programs, satisfaction levels with the quality of teaching is as low as 25% in some programs. Satisfaction with advising is as low as 17% among the masters programs. Quality of instruction, advising, and faculty helpfulness in the undergraduate programs ranges downward to the 50% level. Implementing improvements identified through outcome assessment processes would benefit the institution.

## ***9. Integrity, Transparency, and Public Disclosure***

In discussions held with various MIT constituencies, the accreditation team heard that “MIT is a place of integrity” where issues relating to ethics, values, and integrity are engaged, discussed and debated at department, school and institute levels. Members of the community expressed no tolerance for unethical behavior and an expectation that the administration of MIT will actively seek improvements in policies and procedures to addresses the occasions where unethical actions emerge.

There are opportunities for questions or concerns about unethical behavior to be raised within the institution, including in meetings between faculty, faculty leadership, and the administration. New policies are generated and promulgated thoughtfully to students, faculty and staff using targeted communications strategies.

MIT faculty have engaged in sustained discussions on the proper place of ethics in the MIT curriculum with an awareness of the ethical questions and implications arising from new technologies. These questions have percolated in thoughtful ways throughout the planning for the new College of Computing.

Through deliberate efforts, MIT has made some significant strides in diversifying the student and faculty populations, and issues of diversity and inclusion are central to the work of the biennial Visiting Committees.

The Institute continues to engage in policy development and improvement including a new policy pertaining to consensual sexual relationships. The *policies.mit.edu* website consolidates a wide-variety of policies for students, faculty, and staff into a single resource, facilitating access and searching.

Even given these measure, the accreditation team heard from various constituencies that knowledge of policies and the processes for addressing problems was uneven across the Institute. The Institute has made some steps to increase awareness, such as through the *policies.mit.edu* website and taking the concrete step—suggested by the Education and Prevention Task Force on gender-based violence—of placing “Where to get help” stickers in bathroom stalls. Going forward, communication must be an ongoing effort, and MIT should continue seeking new ways to cultivate a broad-based understanding of its policies and practices, including the anonymous reporting hotline for making complaints about wrongdoing.

***Transparency & Public Disclosure:*** On its public-facing websites, MIT makes available information about itself in ample quantity to inform prospective and current students, faculty and staff regarding the cost of attendance, academic offerings, and Institute policies and processes. This information is readily findable and presented in ways that are easily understood and digested. The *Invitation for Public Comment* was published (online) on June 7, 2019 in *The Tech*. Two months earlier, on April 10, 2019, the full self-study report was made available to the MIT community for comment.

The course catalog is published on-line and is well-organized and searchable. The accreditation team heard from some in the administration that there is student demand to replace the student registration system with something more modern that would be mobile-friendly and make it easier to navigate the process of add/drop.

The institutional research office makes available and easily accessible a wide variety of data and reports to the public, including detailed demographic information about constituent populations, information about undergraduate and graduate student outcomes, and responses to surveys of the Institute’s students, faculty, staff and alumni.

### *Affirmation of Compliance*

To document the institution's compliance with Federal regulations relating to Title IV, the team reviewed the Institute's Affirmation of Compliance form signed by the CEO. MIT publicly discloses on its website and in its Bulletin its policy on transfer of credit. The Invitation for Public Comment was published (online) on June 7, 2019 in The Tech. Two months earlier, on April 10, 2019, the full self-study report was made available to the MIT community for comment. The institution's grievance procedures for students can be found in the Institute's Mind & Hand Book which is also available online. MIT does not offer any fully online programs. The team found the assignment of credit consistent with the Commission's standards and a discussion of MIT's credit hour policy can be found in the Integrity of the Award of Academic Credit section in Standard 4: The Academic Program.

### *Summary*

The team was impressed by the commitment to excellence, shared sense of mission, dedication and energy of the MIT leadership, faculty, staff, and students, as well as the alumni and members of the Corporation. The drive for innovation, the desire to contribute to society and the world, and the dynamism of the community make MIT a special place, a place that is and will remain one that others in the county and the world want to emulate.

MIT is a remarkable institution with outstanding faculty, staff, and students and a long history of accomplishments in education, research and innovation with impact at the local, national and international levels. MIT appreciates that its reputation and accomplishments come with leadership expectations. In this regard, the institution should be commended for its commitment to continuous improvements in all areas important to higher education, not only in the science and technical arenas, but also in addressing important societal issues such as diversity and access to education, as well as global issues such as energy, climate change and adaptation.

In the educational area, MIT is showing its commitment to innovation through the creation of the Schwarzman College of Computing. Creating a foundation college cutting across five schools with a long history is a bold move that recognizes the importance of computational thinking in education, irrespective of the studies followed by the students. *MIT.nano* is another example, in the research area, of the boldness of MIT, but the institution's leadership go well beyond education and research as attested by the Kendall Square initiative which will provide significant opportunities for innovation and economic development as well as for enhanced living conditions for the MIT community.

We also commend MIT for addressing issues that are typically unpopular on university campuses, such as the recent changes in housing policies. As the impact of these changes is

assessed over time, the committee anticipates positive impacts on student life and well-being on the MIT campus.

The proactive approaches that MIT has taken over the past 10 years to enhance its financial resources are also worth noting. Through extensive fund raising, investment and disciplined financial management, the resource base of MIT is now more diversified than in the past and it is placing the institution in a very solid position for the future. In addition, MIT has made significant progress in addressing deferred maintenance issues that were raised in the 2009/10 accreditation cycle; it has also enhanced its ability to provide scholarships to its students, resulting in a reduction of the average debt per student. The additional financial resources generated by the Kendall Square initiative when it reaches steady-state should give MIT even greater financial flexibility and opportunities for strategic deployment of these funds.

Although one can only be impressed by the excellence and vitality of MIT, the visiting team would like to point out areas where concerns were expressed during the site visit and/or opportunities exist for further improvements:

- There is an apparent lack of student learning outcomes for a number of MIT programs. This should receive attention, including assessing student learning with respect to the General Institute Requirements. This is important as MIT works to establish the College of Computing and the roles it will play in the undergraduate and graduate programs, including the General Institute Requirements.
- Maintaining a balance between curiosity-driven research and more technological and entrepreneurship-based endeavors is important to a science and engineering focused institution such as MIT. Some faculty are concerned that the focus is shifting too rapidly toward the more entrepreneurial and applied side. In particular, they feel it is critical for MIT to retain a common intellectual experience of undergraduates so that the students can appreciate the scientific foundation of technological developments.
- A culture that values risk-taking must also be a culture that creates open dialog that helps identify and responds to negative outcomes.
- Both the administration and faculty should expand outreach, communications, and engagement with undergraduate and graduate students, as well as post-docs, regarding decision-making around issues related to residence hall life on the MIT campus to reduce the perception that “decisions are already made” prior to the administration’s seeking of students input.
- The Schwarzman College provides both opportunities and challenges for faculty growth and enhancement of diversity among the faculty.
- Twenty years ago, MIT showed leadership by evaluating thoroughly the issues faced by women on campus and undertaking process and cultural changes. MIT’s influence was felt and spread to other universities in the nation. Although progress has been made, renewed attention and energy should be given to recruiting, engaging and giving voice to diverse

populations, including underrepresented minorities. This is everyone's responsibility at all levels and should be embedded in the culture.

Several of the points raised above reflect signs that the institution is currently under some stress as it experiences significant changes, including the creation of the College of Computing, the development of the Kendall Square project, and changes to housing policies. This stress has been exacerbated in recent weeks by the turmoil surrounding the Media Lab, a highly publicized situation with a former donor.

Handling and acceptance of donations in question were not in accordance with MIT's values and commitment to excellence and integrity in all matters, MIT has acknowledged that this reflects poorly on the institution. A formal investigation is ongoing and it was not under the purview of the team to investigate this particular situation; however the topic was raised as part of several discussions with leaders, faculty, staff and students.

The committee anticipates that MIT will complete a thorough investigation and will improve its oversight processes and policies in response to its findings. The community is hurt deeply and is wondering what it really means to MIT and its culture. This is leading to some distrust, but this is compensated by strong faith in the institution and its resolve when addressing difficult issues.

MIT will need to undertake a process of introspection, of soul searching: is there a larger cultural problem? Based on the interaction we had with the community, it seems that enhanced communications and consultation, formal and informal, and creation of a culture of surfacing problems and of engaging in open debate should be part of this phase of introspection.

This institution is remarkable, it is made of outstanding people who are proud of being part of it and dedicated to its success, and it has contributed enormously to the country and the world for decades. There is no doubt that it will respond to the challenge and will emerge strengthened through such a process of evaluation and introspection.

As was so well concluded by the 2009 evaluation team, the 2019 visiting team is confident that MIT will continue to be one of the country's flagship educational and research institutions, in fact one of the world's flagship institutions.



MIT NECHE Team Visit Schedule  
 September 22-25, 2019  
 Version 5 - as of September 20

	Date/Time	Activity MIT Participants	Location Visiting Team Participants
	Sunday, September 22		
	3:30 - 5:30 pm	Visiting Team Meeting	Boston Marriott Cambridge Enterprise Room, 3rd floor <i>All team members</i>
	6:30 - 9:00 pm	<b>Dinner with Steering Committee and Chair of the MIT Corporation</b> L. Rafael Reif, President Cynthia Barnhart, Chancellor Suzanne Glassburn, Vice President and Secretary of the Corporation Robert Millard, Chair, MIT Corporation Israel Ruiz, Executive Vice President and Treasurer Martin Schmidt, Provost Aaron Weinberger, Special Advisor to the Vice President (staff)	Gray House (MIT President's home) <i>All team members</i>
	9:15pm -	Visiting Team Meeting	Boston Marriott Cambridge Enterprise Room, 3rd floor <i>All team members</i>
	Monday, September 23		
	7:30 - 8:30 am	Visiting Team Breakfast	Boston Marriott Cambridge Enterprise Room, 3rd floor <i>All team members</i>
Breakout	8:30 - 9:30 am	<b>Tour of MIT Kendall Square Initiative</b> Israel Ruiz, Executive Vice President and Treasurer Patrick Rowe, Managing Director, Real Estate, MIT Investment Management Company	Kendall Square <i>Jean-Lou Chameau (team lead)</i> <i>Marin Clarkberg (Standards 2, 9)</i> <i>Persis Drell (Standards 3, 9)</i> <i>Kent Holsinger (Standard 4)</i> <i>Kevin Keller (Standard 4)</i>
	8:30 - 9:30 am	Visiting Team Review of Workroom Materials	Room 10-105 (Bush Room) <i>Kathleen Byington (Standard 7)</i> <i>Donald Feke (Standard 8)</i> <i>Arthur Heinricher (Standard 4)</i> <i>Valarie Swain Cade McCoullum (Standard 5)</i> <i>Ken Sacks (Standard 6)</i>
	9:30 - 10:00 am	Meeting with President Reif	Room 10-300 (Maclaurin Room) <i>All team members</i>
Breakout	10:15 - 11:05 am	<b>Academic Deans</b> Anantha Chandrakasan, Dean, School of Engineering Dan Huttenlocher, Dean, MIT Schwarzman College of Computing Melissa Nobles, Dean, School of Humanities, Arts, and Social Sciences Hashim Sarkis, Dean, School of Architecture and Planning David Schmittlein, Dean, Sloan School of Management Michael Sipser, Dean, School of Science	Room 10-300 (Maclaurin Room) <i>Persis Drell (Standards 3, 9)</i> <i>Arthur Heinricher (Standard 4)</i> <i>Kent Holsinger (Standard 4)</i> <i>Ken Sacks (Standard 6)</i>
	10:15 - 11:05 am	<b>Undergraduate/Graduate Education and Student Life</b> Suzy Nelson, Vice President and Dean for Student Life Ian Waitz, Vice Chancellor for Undergraduate and Graduate Education	Room 10-340 (Emma Rogers Room) <i>Donald Feke (Standard 8)</i> <i>Kevin Keller (Standard 4)</i> <i>Valarie Swain Cade McCoullum (Standard 5)</i>
	10:15 - 11:05 am	<b>Administration</b> Tony Sharon, Deputy Executive Vice President and Treasurer Glen Shor, Vice President for Finance Mark Silis, Vice President for Information Systems and Technology	Room 3-211 (Simonides Room) <i>Kathleen Byington (Standard 7)</i> <i>Jean-Lou Chameau (team lead)</i> <i>Marin Clarkberg (Standards 2, 9)</i>

Breakout	11:15 am - 12:05 pm	<b>Select Members of the MIT Corporation</b> Robert Millard, Chair, MIT Corporation Nancy Andrews, Member, Executive Committee of the MIT Corporation Alan Spoon, Member, Executive Committee of the MIT Corporation Susan Whitehead, Member, Executive Committee of the MIT Corporation	<b>Room 3-211 (Simonides Room)</b> Kathleen Byington (Standard 7) Jean-Lou Chameau (team lead) Marin Clarkberg (Standards 2, 9) Persis Drell (Standards 3, 9) Valarie Swain Cade McCoullum (Standard 5)
	11:15 am - 12:05 pm	<b>Research</b> Ron Hasseltine, Assistant Provost for Research Administration Colleen Leslie, Sr. Director for Research Administration and Compliance	<b>Room 4-105</b> Donald Feke (Standard 8) Kevin Keller (Standard 4) Arthur Heinricher (Standard 4) Kent Holsinger (Standard 4) Ken Sacks (Standard 6)
Breakout	12:15 - 1:45 pm	<b>Lunch with Faculty Officers</b> Rick Danheiser, Chair of the Faculty (current) Duane Boning, Associate Chair of the Faculty (current) Susan Silbey, Chair of the Faculty (former)	<b>Room 10-340 (Emma Rogers Room)</b> Persis Drell (Standards 3, 9) Arthur Heinricher (Standard 4) Kent Holsinger (Standard 4) Ken Sacks (Standard 6)
	12:15 - 1:45 pm	<b>Lunch with Undergraduate Student Officers</b> Mahi Elango, President, Undergraduate Association (UA) Danielle Geathers, Assistant Officer on Diversity, UA Kelvin Green II, Vice President, UA Andrew Haeffner, Treasurer, UA Noah McDaniel, Assistant Officer on Policy, UA Charlotte Minsky, Chief of Staff, UA Rishi Shah, Secretary, UA	<b>Flowers Dining Room (Maseeh Hall)</b> Donald Feke (Standard 8) Kevin Keller (Standard 4) Valarie Swain Cade McCoullum (Standard 5)
	12:15 - 1:45 pm	<b>Lunch with Select Alumni</b> Steve Baker Kerry Bowie Karl Buttner Henry Houh Paul Kominers Peter Quigley Hollie Schmidt	<b>Room 10-300 (Maclaurin Room)</b> Kathleen Byington (Standard 7) Jean-Lou Chameau (team lead) Marin Clarkberg (Standards 2, 9)
Breakout	2:00 - 2:40 pm	<b>Institutional Research</b> Lydia Snover, Director, Institutional Research Jon Schwarz, Assistant Director, Institutional Research	<b>Room 3-211 (Simonides Room)</b> Marin Clarkberg (Standards 2, 9) Donald Feke (Standard 8) Arthur Heinricher (Standard 4) Ken Sacks (Standard 6)
	2:00 - 2:40 pm	<b>Space Planning</b> Joe Higgins, Director, Infrastructure Operations Tony Sharon, Deputy Executive Vice President Krystyn Van Vliet, Associate Provost	<b>Room 3-240 (Krystyn's office)</b> Kathleen Byington (Standard 7) Jean-Lou Chameau (team lead) Valarie Swain Cade McCoullum (Standard 5)
	2:00 - 2:40 pm	<b>Governance</b> Suzanne Glassburn, Vice President and Secretary of the Corporation Kathryn Liede, Deputy Secretary of the Corporation Chris Taylor, Associate Secretary of the Corporation	<b>Room 4-105</b> Persis Drell (Standards 3, 9) Kent Holsinger (Standard 4) Kevin Keller (Standard 4)
Breakout	2:55 - 3:45 pm	<b>Finances</b> Seth Alexander, President, MIT Investment Management Company Glen Shor, Vice President for Finance	<b>Room 3-211 (Simonides Room)</b> Kathleen Byington (Standard 7) Jean-Lou Chameau (team lead) Marin Clarkberg (Standards 2, 9)
	2:55 - 3:45 pm	<b>Open Learning</b> Krishna Rajagopal, Dean for Digital Learning	<b>Room 10-300 (Maclaurin Room)</b> Persis Drell (Standard 3) Donald Feke (Standard 8) Arthur Heinricher (Standard 4) Kent Holsinger (Standard 4) Kevin Keller (Standard 4) Valarie Swain Cade McCoullum (Standard 5) Ken Sacks (Standard 6)

Breakout	4:00 - 5:00 pm	<b>Open Forum for Faculty</b> All faculty invited	<b>Room 10-250</b> <i>Persis Drell (Standards 3, 9)</i> <i>Arthur Heinricher (Standard 4)</i> <i>Kent Holsinger (Standard 4)</i> <i>Ken Sacks (Standard 6) - may shuttle to student session</i>
	4:00 - 5:00 pm	<b>Open Forum for Undergraduate Students</b> All undergraduate students invited	<b>Room 46-3002</b> <i>Donald Feke (Standard 8)</i> <i>Valarie Swain Cade McCoullum (Standard 5)</i>
	4:00 - 5:00 pm	<b>Open Forum for Postdocs and Research Staff</b> All postdocs and research staff invited	<b>Room 34-101</b> <i>Kathleen Byington (Standard 7)</i> <i>Jean-Lou Chameau (team lead)</i> <i>Marin Clarkberg (Standards 2, 9)</i> <i>Kevin Keller (Standard 4)</i>
Breakout	5:00 - 6:00 pm	<b>Open Forum for Graduate Students</b> All graduate students invited	<b>Room 46-3002</b> <i>Valarie Swain Cade McCoullum (Standard 5)</i>
	5:00 - 6:00 pm	<b>Return to Hotel</b>	<b>Boston Marriott Cambridge</b> <i>All other team members</i>
	6:15 pm -	<b>Visiting Team Working Dinner</b>	<b>EVOO, 350 Third Street</b> <i>All team members</i>
Tuesday, September 24			
	7:30 - 9:00 am	<b>Visiting Team Breakfast</b>	<b>Boston Marriott Cambridge Enterprise Room, 3rd floor</b> <i>All team members</i>
Breakout	9:00 - 10:00 am (leave at 8:45 am)	<b>Visiting Team Review of Workroom Materials</b>	<b>Room 10-105 (Bush Room)</b> <i>Jean-Lou Chameau (team lead)</i> <i>Marin Clarkberg (Standards 2, 9)</i> <i>Persis Drell (Standards 3, 9)</i> <i>Kent Holsinger (Standard 4)</i> <i>Kevin Keller (Standard 4)</i>
	9:00 - 10:00 am (leave at 8:45 am)	<b>Meeting with Students from Underrepresented Communities</b> Luke Bastian, Civil and Environmental Engineering (junior) René Adrés García Franceschini, Technology and Policy (graduate student) Kendyll Hicks, Computer Science and Molecular Biology (senior) Deekshita Kacham, MIT Sloan School of Management (sophomore) Rijul Kochhar, Science, Technology, and Society (graduate student) Katherine Mizrahi, Materials Science and Engineering (graduate student) Candace Ross, Electrical Engineering & Computer Science (graduate student) Others TBD	<b>Room 4-105</b> <i>Valarie Swain Cade McCoullum (Standard 5)</i>
	9:00 - 10:00 am	<b>Tour of MIT Kendall Square Initiative</b> Israel Ruiz, Executive Vice President and Treasurer Patrick Rowe, Managing Director, Real Estate, MIT Investment Management Company	<b>Kendall Square</b> <i>Kathleen Byington (Standard 7)</i> <i>Donald Feke (Standard 8)</i> <i>Arthur Heinricher (Standard 4)</i> <i>Ken Sacks (Standard 6)</i>
	10:15 - 11:05 am	<b>Measuring Effectiveness</b> Ian Waitz, Vice Chancellor for Undergraduate and Graduate Education Liz Green, Sr. Director, Assessment, Division of Student Life Janet Rankin, Director, Teaching and Learning Laboratory Lydia Snover, Director, Institutional Research	<b>Room 10-340 (Emma Rogers Room)</b> <i>All team members</i>

Breakout	11:15 - 11:45 am	<b>Libraries</b> Tracy Gabridge, Deputy Director, MIT Libraries	<b>Room 3-211 (Simonides Room)</b> <i>Kathleen Byington (Standard 7)</i> <i>Marin Clarkberg (Standards 2, 9)</i> <i>Arthur Heinricher (Standard 4)</i> <i>Valarie Swain Cade McCoullum (Standard 5)</i>
	11:15 - 11:45 am	<b>International</b> Richard Lester, Associate Provost for International Activities Rohan Abeyaratne, Chair, International Advisory Committee	<b>Room 4-104 (Richard's office)</b> <i>Jean-Lou Chameau (team lead)</i> <i>Persis Drell (Standards 3, 9)</i> <i>Donald Feke (Standard 8)</i> <i>Kevin Keller (Standard 4)</i> <i>Kent Holsinger (Standard 4)</i> <i>Ken Sacks (Standard 6)</i>
Breakout	12:00 - 1:30 pm	<b>Lunch with Select Academic Department Heads</b> Eran Ben-Joseph, Head, Department of Urban Studies and Planning Peter Fisher, Head, Department of Physics Asu Ozdaglar, Head, Department of Electrical Engineering and Computer Science Nancy Rose, Head, Department of Economics Ezra Zuckerman, Deputy Dean, MIT Sloan School of Management	<b>Room 10-340 (Emma Rogers Room)</b> <i>Marin Clarkberg (Standards 2, 9)</i> <i>Persis Drell (Standards 3, 9)</i> <i>Arthur Heinricher (Standard 4)</i> <i>Kent Holsinger (Standard 4)</i> <i>Ken Sacks (Standard 6)</i>
	12:00 - 1:30 pm	<b>Lunch with Graduate Student Leaders</b> Peter Su, President, Graduate Student Council (GSC) Alexander Joerger, Vice President, GSC Bianca Lepe, Chair, GSC Diversity, Equity, Inclusion Comm. (will arrive late) William Robin Lindemann, Treasurer, GSC (will arrive late) Nicole Moody, Treasury, GSC (former)	<b>Flowers Dining Room (Maseeh Hall)</b> <i>Donald Feke (Standard 8)</i> <i>Kevin Keller (Standard 4)</i> <i>Valarie Swain Cade McCoullum (Standard 5)</i>
	12:00 - 1:30 pm	<b>Lunch with Select Postdocs</b> Qasim Bukhari Cristina Florea Jette Lengefeld Dien Thi Nguyen Inez von Weitershausen (will leave at ~12:50) Man Ho Wong	<b>Room 10-300 (Maclaurin Room)</b> <i>Kathleen Byington (Standard 7)</i> <i>Jean-Lou Chameau (team lead)</i>
	1:30 - 5:00 pm	<b>Follow-up Meetings, Document Review, Writing</b> <u>4:15-5: Kent meets with Ian Waitz/Krishna Rajagopal (Bldg 7, Rm 133)</u>	<b>Room 10-105 (Bush Room)</b> <i>All team members</i>
	5:00 - 5:50 pm	<b>Return to Hotel</b>	<b>Boston Marriott Cambridge</b> <i>All team members</i>
	6:00 pm -	<b>Visiting Team Working Dinner</b>	<b>Catalyst, 300 Technology Square Crick Room</b> <i>All team members</i>
Wednesday, September 25			
	7:30 - 10:45 am	<b>Visiting Team Breakfast, Deliberations, Writing</b>	<b>Boston Marriott Cambridge Enterprise Room, 3rd floor</b> <i>All team members</i>
	11:00 - 11:30 am	<b>Pre-Exit Report Meeting, Dr. Chameau and President Reif</b>	<b>Room 3-208 (President Reif's office)</b> <i>Jean-Lou Chameau</i>
	11:30 am - 12:00 pm	<b>Exit Report to Academic Council and Chair of the MIT Corporation</b> Academic Council (including the Steering Committee) Robert Millard, Chair, MIT Corporation	<b>Room 10-105 (Bush Room)</b> <i>All team members</i>