

Report* to the
Faculty, Administration, Trustees, Students
of
Massachusetts Institute of Technology
Cambridge, Massachusetts
by
An Evaluation Team representing the
Commission on Institutions of Higher Education
of the
New England Association of Schools and Colleges

Prepared after study of the institution's
self-evaluation report and a visit to
the campus October 4-7, 2009

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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 institutions's accreditation status.

Introduction

The team appointed by the Commission on Institutions of Higher Education of the Northeastern Association of Schools and Colleges (NEASC) visited the Massachusetts Institute of Technology (MIT) from October 4 – 7, 2009. The team was charged to make a recommendation concerning accreditation. This was a 10-year review.

This report is based upon selected reports and publications, including a very thorough, clear and thoughtful Institutional Self-Study Report provided by MIT. In addition, during the visit, the team had extensive discussions, individually or in groups, with members of the MIT student body, faculty, administration, and trustees. The formal meetings are described in the team agenda, found in Appendix I and the Master Attendance Schedule, Appendix II.

The team found the members of the MIT community to be proud of their institution, willing to discuss its strengths and weaknesses, open, and objective in their approach to problems. We are grateful to them for the courtesy shown to us, their willingness to spend considerable time helping us achieve our task, including providing extensive written materials, formal presentations, and many impromptu discussions.

Our team included those who were familiar with the institution and those who were visiting campus for the first time. All knew of MIT through reputation, but several learned a great deal about its distinctive culture during our visit. We all came away with a deeper appreciation of its mission, its goals, and its quality.

Before discussing each of the criteria relevant to reaccreditation, we would like to make a few observations. Since the 1999 accreditation visit, the administration has experienced a great deal of change. The new President, Susan Hockfield, has been in office for 5 years. She has surrounded herself with an able group of faculty and professional staff to assist her in administration of the Institute.

MIT is a dynamic institution, testing new initiatives, procedures, and arrangements to become even stronger. This dynamic seems to us most appropriate for a leading US research university, which surely MIT is.

Like many of the best private universities in the country, MIT is facing the challenges arising from the impact of the financial crisis on their endowment. In developing a strategy to address this issue, MIT has used a Task Force on Institute Wide Planning to search for both revenue enhancements and cost savings. This Task Force incorporated dozens of faculty, staff, and students, as well as an Idea Bank for submitting suggestions from any member of the Institute community. The process has resulted in many ideas bundled into several key areas primarily focused on revenue enhancement and efficiency improvements.

Clearly, addressing the financial challenges will be necessary to maintain the tradition of excellence at MIT. Two areas in the task force report seemed particularly promising to the visiting committee: enlarging the student body (while maintaining the commitment to house all freshmen) and modernizing

administrative processes (called Digital MIT). As the Task Force report points out, MIT has a very low student-faculty ratio, which has actually decreased over the past decade, as the undergraduate body shrunk in response to the desire to house all freshmen. Small increases in the student body could probably be accommodated with little or no impact on the quality of the educational programs, while also maintaining the housing guarantee. As described in the Task Force Report, there are significant opportunities to improve the efficiency of various administrative processes (Digital MIT), primarily through the use of information technology and appropriately restructured business processes. While these changes are likely to have one-time short-term costs, they could create long-term annual savings and seem to be worth pursuing.

Although MIT, like its peers, faces challenges, the committee discovered in its meetings a tremendous pride in MIT's accomplishments and a willingness to address the challenges as well as to continue to innovate. The committee is confident that MIT will continue to be one of the country's flagship educational and research institutions.

Standard One: Mission and Purposes

MIT has identified its mission as "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." It seeks to do this "for the betterment of humankind," while instilling in each student the "ability to work wisely, creatively, and effectively."

This is an ambitious mission, and it was evident in the different conversations that the Accreditation Team had with faculty, administrators and students. Of particular note are the ethical impulse to aim for the "betterment of humankind," and the stated goal to serve both the nation and the world at large. The Accreditation Team was positively impressed by the degree to which the faculty and students have internalized the mission, and bring it to bear in their educational and research programs.

The Institute's commitment to thinking creatively leads to a drive for innovation tied to the ethical imperative to prepare a diverse student body to face the 21st century. In order to do so, it has sought to build a flexible curriculum with a global perspective, emphasizing leadership skills and service. It is important to note that the commitment to service continues during the students' life at MIT: 75% of them sustain it in the midst of a demanding curriculum.

The focus on innovation stems naturally from the Institute's commitment to science and engineering; it is enhanced by the very strong presence of the arts, which are structured so as to take advantage of the synergies between them and science and engineering.

The impulse to serve the world as well as the nation needs to include a clear commitment to communicating with other cultures with appropriate levels of

linguistic and cultural competence. The Accreditation Team endorses this goal and hopes MIT will continue to train its brilliant students so that they will function as global citizens.

Institutional Effectiveness

The institution uses its various ad hoc committees to re-evaluate its goals with regard to undergraduate and graduate education and makes resource allocations accordingly.

Standard Two: Planning and Evaluation

Planning

Based on the institutional self-study, the *Institute-wide Planning Task Force Preliminary Report*, supporting materials (including the S and E forms, and numerous interviews and conversations with members of the MIT community), the Accreditation Team finds that MIT has a long history of conducting systematic, comprehensive, broad-based, institute-appropriate planning and evaluation.

Strategic visioning and collaborative planning occur at the highest levels of the administration. This is referred to in the self-study document as “visioning for the future.” During the 2008-09 academic years, the Academic Council (a team consisting of the President, the senior leadership team plus the chair of the faculty) served as a forum to learn about the strategic initiatives being planned by the schools and units and to explore potential cross-Institute activities. In addition, the Office of the Vice President for Research and Associate Provost is working with faculty to coordinate research planning.

Throughout the pages of the self-study there are descriptions of the formation of numerous task forces, which were established to examine particular issues. Creating these issue-specific committees, rather than embarking on an overarching strategic planning process, was a purposeful decision on the part of the MIT administration. These various committees, councils or task forces, comprised of appropriate representatives of the MIT community, include the Task Force on the Undergraduate Educational Commons (UEC), International Advisory Committee, the Global Council, the Environmental Research Council, the Initiative on Faculty Race and Diversity, the Committee on the Undergraduate Program, the Graduate Student Council’s Academic, Research and Careers (ARC) Committee, the Task Force on Student Engagement, the Blue Ribbon Committee on Dining, the Mental Health Task Force, the Library Strategic Planning Committee, and the Committee for the Review of Space Planning. The issues that have been addressed have covered both curricular and co-curricular matters.

In addition to Institute-wide planning initiatives, planning occurs at the department level as well. Within the context of producing an annual budget document, academic departments are required to identify both short- to medium-term resource needs, as well as to provide annual evaluations of their achievements. In addition to the annual budget planning process, the Institute has a well-established procedure of

visiting committee reviews. There are 31 visiting committees that meet on campus once every two years. Visiting committees prepare written reports that contain contextual data, identification of challenges, and recommendations for improvement. The reports focus primarily on faculty and students. These reports are shared with the Corporation, senior administrators, and the department head. In addition, it is not uncommon that visiting committee chairs will meet with department chairs approximately 12 months after the visit to assess progress on the committees' recommendations.

Evaluation

It is clear from the self-study document, materials provided to the team, and on campus interviews that an abundance of data is collected to provide the Institute with information that will assist in making informed decisions. The Institute has developed a sophisticated institutional research capacity. The Office of Institutional Research (IR) systematically collects and analyzes data. These data are obtained from either extant information systems (e.g., student information, research administration and space) or a comprehensive survey research program (e.g., faculty, exiting student, graduate student, and alumni surveys). The strategic indicators report and department profiles are very comprehensive. Moreover, the information that is obtained via surveys is a valuable source of indirect assessment measures. It was not clear to what extent the departments and visiting committees avail themselves of this information. From our conversation, we believe that usage varies across schools and departments.

The Institute Wide Planning Task Force relied on a Data Analysis Group to provide information. In the report, there is a call to create a series of metrics that will help the Institute better understand the current economic situation in which it is operating.

In addition, other groups within the Institute collect information to help inform decision-making. The Student Committee on Education Policy provides student feedback to the departments and the Institute on important educational issues. The Undergraduate Research Opportunities Program (UROP) survey of students demonstrated that the UROP projects helped student achieve program goals. The Global Education and Career Development Center administers an annual survey. The Undergraduate Practice Opportunities Program administers a survey. The Public Service Center gathers data from key constituents and has a comprehensive assessment program in place. In addition, Health Services, Mental Health Services, the Libraries, and Information Services and Technology (IS&T) have conducted surveys to better understand their constituencies.

MIT also conducts periodic surveys like the College Board's Admitted Student Questionnaire, the Parent Survey and exit surveys from MIT's annual Family weekend. These surveys help admissions and financial aid evaluate the effectiveness of the information they send to students.

At MIT, direct assessment of student learning is viewed as the responsibility of the academic departments. In the E forms, most undergraduate programs identified

learning objectives. Learning objectives for the graduate programs, however, were noticeably absent. Moreover, there was no description of how the learning objectives were being assessed. MIT does have a Teaching and Learning Laboratory with a highly professional staff that works with individual faculty and departments to evaluate the efficacy of new programs and the attainment of learning objectives. An excellent example is the work that was conducted in collaboration with the Physics department to evaluate the Technology Enhanced Active Learning (TEAL) initiative. There does not appear to be an Institute-wide culture to rely on direct measures (evidence of student work) to systematically examine whether learning objectives are being achieved.

There is currently an effort underway to evaluate the effectiveness of the new communications initiative. Given the distributed nature of this initiative, it is not clear as to whether it will be possible to conduct a systematic Institute-wide assessment.

The Self-Study did provide some evidence of “closing the loop.” This concept is regularly practiced in the School of Engineering and there are numerous examples from the fourteen ABET accredited programs. The Sloan School’s evaluation of its undergraduate minor included gathering information, assessing the data, and implementing change. It appears that library planning is based on the quantitative and qualitative assessment of existing services and resource provisions, as well as methods for understanding user needs and views. Using a satisfaction survey helped IS&T determine where needs were greatest, providing a systematic mechanism for gauging the department’s effectiveness.

Institutional Effectiveness

Given the ongoing nature of planning and evaluation activities, it is apparent that the Institute is using these activities to improve processes. The Team was impressed with the vast array of initiatives at both the institution and department levels.

Standard Three: Organization and Governance

Since its founding in 1861, the Massachusetts Institute of Technology (MIT) has been headed by a President in partnership with a Corporation. The Corporation is the stated and recognized governance body and MIT’s by-laws clearly delineate the composition, duties and responsibilities of the Corporation members and its officers. Those provisions allow for ample student representation through recent alumni slots on the Corporation and meetings with students through designated committees; moreover, the Corporation sustains active interaction with the faculty through its Visiting Committee structure and through formal and informal interactions with faculty-sanctioned committees. The schedule for both Corporation meetings and Visiting Committee meetings are known well in advance, as are the agendas.

While the Corporation meets four times per year (October, December, March and May), the Executive Committee of the Corporation meets more often, frequently ten times a year. The Executive Committee consists of the Chair of the Corporation, the President, the Executive Vice President and Treasurer, and the Chair of the board of directors of the Investment Management Company, as well as five Corporation members who serve five-year terms and three who serve three-year terms. In keeping with a long history, albeit somewhat atypical nationally, the President chairs the Executive Committee. The Executive Committee has a broad range of powers and duties, among them appointments to vacancies, oversight of compensation for University officers, tuition, budgets, salary increases, and expansions or alterations of the physical plant. The Corporation and its Executive Committee adhere to contemporary conflict of interest standards and execute their duties with the best interest of the Institute in mind. It is the Corporation, working with its Chair, which appoints, evaluates and sets the compensation for the President, however.

To ensure maximum effectiveness, the Corporation draws its membership from leaders in a wide range of sectors, including MIT's alumni community, financial, academic and civic affairs, and the broader international community. The seventy-eight members of the Corporation review institutional policies, monitor the Institute's fiscal solvency, and approve modifications in mission and capacity.

The Corporation's Visiting Committee structure allows this governing board to understand and influence the academic mission and goals of the institution with greater clarity and specificity than is typical for most highly selective research universities. The Visiting Committees are comprised of approximately one-third corporation members, one-third alumni and one-third academic peers. During their visits, they review department and unit strategic goals and objectives, meet with students, staff and faculty, address progress since the last review, and discuss issues as well as changes in foci or emphases. Deeply rooted in the culture is the habit of self-reflection and examination; the Visiting Committee reviews ensure that each unit fulfills its mission and achieves its stated purpose and goals. Through the Visiting Committees, Corporation members meet with faculty, department heads, senior administrative leadership and other stakeholders every two years. In a given year half of these committees meet; the remainder meet in the following year. 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.

While the Corporation as of yet has not adopted a formal self-assessment tool, it does practice systematic self-evaluation for effectiveness. At the conclusion of each Corporation meeting, members are surveyed. Members are asked to assess the content of meetings, the issues covered, and whether changes of any kind are warranted. The Membership Committee scrutinizes potential members for fit and Corporation need, and reviews veteran members for effectiveness. In addition, at the conclusion of each Visiting Committee presentation, committee chairs are asked to rate the performance of Corporation members, which is used to improve the

quality of engagement. These multiple efforts work to enhance the overall effectiveness of the Corporation.

Working through its committee structures, the Corporation has a well-developed sense of governance. In addition to the Executive Committee, the Corporation has the following standing committees or boards: Investment Management Company Board of Directors, Audit Committee, Membership Committee, Corporation Joint Advisory Committee in Institute-Wide Affairs and the Screening Committee for Recent Graduates. According to the self-study as well as interviews, conversations and other documents, the day-to-day management of the institution is left to the President and her leadership team.

The President's leadership team is clearly delineated in the Institutional Self-Study document and accompanying appendices. Directly reporting to the President are the Chancellor, who oversees undergraduate and graduate student life and affairs; the Provost, the Institute's chief academic officer and chief academic budget officer; and the Executive Vice President and treasurer, who is responsible for all business functions, finance, investment and human resources. Also reporting to the President are the Vice President for Institute Affairs and Corporation Secretary, the Vice President for Resource Development and the Vice President and General Counsel.

A unique feature of MIT's leadership structure is the Academic Council. Chaired by the President, the 24 member Academic Council brings together the senior academic administrative leadership plus the chair of the faculty, who plays a vital role in charting Institute priorities and representing the perspective of the faculty. During the academic year, the Council meets weekly for two hours. This body, working with the schools and colleges, assures that all programs, whether residential, distance, or international, meet the highest academic standards and are evaluated in line with other academic programs at MIT. For example, The Report of the MIT Global Council (September 2009) and the final report of the MIT International Advisory Committee (September 3, 2009) reaffirm the importance of integrated standards for all MIT activities, whether in Cambridge or some other part of the world. Here faculty committees charged by the Provost reaffirm the guiding principles for Institute goals. This sense of shared governance is understood as a vital aspect of MIT's community ethos.

MIT has a demonstrable pattern of responding to issues and concerns raised by all of its stakeholders. Campus documents and various conversations referred to a long list of task forces and committees to address pressing Institute matters. This past year, for example, in response to the global economic collapse, nearly two hundred community members participated in a process guided by the Institute-Wide Planning Task Force. The task force included 87 faculty, 85 staff and 20 students, divided into four broad areas: academic, administrative, student life and revenue enhancement. Through forums and other efforts, more than 200 ideas for addressing the Institute's challenges going forward emerged. Importantly, it is clear that this is not the first time that the administration partnered with faculty and

students to address a community issue. Of course, the severity of the economic decline and the long term implications of any proposed ideas mean that all stakeholders are acutely aware of what it means to make the “right” decisions and to invest in the best choices.

Unquestionably faculty members play a key role in assuring the academic integrity of the institution’s educational programs. Faculty, for example, determine the size and quality of the graduate student population. Faculty establish the standards and learning outcome goals for students in their respective disciplines. And with a faculty of world-class stature, the students recruited and programs developed adhere to the highest standards for excellence. Similarly, faculty make all initial hiring decisions and play an appropriate role in evaluating colleagues for promotion and tenure. Moreover, through the Joint Advisory Committee on Institute-Wide Affairs, which includes students and faculty, members of the Corporation have a direct link to faculty and students, their concerns and priorities.

Institutional Effectiveness

Both the Corporation and the administration make ample use of a variety of evaluative measures. The Corporation uses meeting assessments, conversations with trustees, comments from faculty and students and other methods to assess the effectiveness of committees and individuals. Ineffective Corporation members are invited to step aside, and it is clear that active participation is an expected part of service.

Standard Four: The Academic Program

MIT is organized into five schools: Architecture and Planning; Engineering; Humanities, Arts, and Social Sciences; MIT Sloan (Management); and Science. There is a strong tradition of cross-department centers and specific Institute-wide initiatives such as those in energy and cancer research. A world-class faculty offers a variety of courses of study at the undergraduate and graduate levels to a student body that is as well prepared as any in higher education. For undergraduates, MIT offers 42 programs of study (called “courses” at MIT) leading to the S.B. degree, and for graduate students there are 55 programs leading to a master’s degree and 36 to the Ph.D. Among the undergraduates, nearly 60% major in an engineering field, and another 28% in an area of science.

The Institute has been responsive to many of the suggestions in the 1999 NEASC Evaluation Team Report concerning the academic program. The willingness to experiment with curricular changes is commendable. Since the last report, MIT has introduced a new major in biological engineering, merged its ocean engineering and mechanical engineering departments, and revised its programs of study in civil and environmental engineering as well as in electrical engineering and computer science. It has also introduced several new minors and modified the General Institute Requirements (GIR) in the Humanities, Arts, and Social Sciences (HASS) area. (Broader proposed changes to the GIR were not accepted by the faculty, which

votes on all proposed changes to the core.) There has been an attempt to bolster international experiences for students through research opportunities, academic programs, and summer internships.

Undergraduate Curriculum and Opportunities

As compared to most undergraduate programs emphasizing the liberal arts, MIT requires of its students a relatively expansive yet structured common core of seventeen courses (called “subjects” at MIT). Together, these are referred to as the General Institute Requirements (GIR). Among them, the Science Requirement has challenged entering MIT students for decades and provides a common intellectual and “cultural” experience in the first two years of study. The Humanities, Arts, and Social Sciences Requirement (HASS) has been made more flexible. Beginning in the fall of 2011, incoming undergraduates will take one distribution subject in each of three areas (reduced from five categories) as part of their eight HASS subjects. This change in the HASS requirement struck the Accreditation Team as appropriate in that it introduced more opportunity for exploration into an undergraduate program of study not generally inclined toward flexibility. The relatively new communication requirement also seems to address deficiencies in writing and speaking skills among MIT students that had been reported in various surveys of students, faculty, and alumni. Although the goal of the GIR is to “ignite a passion for learning,” faculty and administrative staff described it as “drinking from a fire hose.” (This phrase, also found in the 1999 evaluation team report, appears to be embedded in MIT’s self-descriptive language.) Nonetheless, the curriculum appears to be well conceived, taught by dedicated faculty, and an important aspect of MIT undergraduate culture. In addition to plunging into their General Institute Requirements, freshmen have the option to enroll in one of four learning communities: Experimental Study Group, Media Arts and Sciences, Terrascope, or Concourse. These programs, using alternative pedagogical approaches, provide students with a less traditional introduction to the MIT undergraduate experience. In our session with students, several spoke especially glowingly of Terrascope. Currently 20% of the freshman class can be accommodated in these four programs, and one wonders whether there is unmet demand in this area.

An undergraduate education at MIT is characterized by unique opportunities for learning outside the classroom, from glassblowing to racing car fabrication. Of particular note is the long-standing commitment to involve undergraduates in mentored research experiences with faculty (with associated funding or credit). The forty year-old Undergraduate Research Opportunities Program (UROP) is especially robust, and about 2,500 students appreciate the opportunity to work alongside 550 faculty members each year. There may be no more important part of an MIT undergraduate education, and in the challenging budget climate ahead, the team recommends that UROP not be compromised.

The undergraduate curriculum is one of the most rigorous and structured among American research universities. The switch from double-degree programs to double-majors appears to be an appropriate one in allowing students a bit more

flexibility in their programs of study. Still, the tendency among students to complete more than one major, along with one or two minors, creates course schedules with few degrees of freedom and thus inhibits students from taking advantage of some newer opportunities such as overseas study.

Pedagogical innovation is finding its way into MIT courses. The Technology-Enabled Active Learning (TEAL) program in Physics impressed the Accreditation Team. The assessment data provided to the Team supports the efficacy of this approach. We wondered whether additional facilities and faculty interest would allow what clearly has been a successful approach to be used in other subjects. Funding will be critical for supporting further teaching innovation, such as the impressive iLab exercises and the well-known Open Courseware (OCW) program; we hope the Campaign for Students is successful in this regard even in these challenging times.

Everyone with whom we spoke at MIT recognized the importance of providing students with an experience of studying or working in another culture. Their 21st century careers will be international ones, and such experiences during the formative years will have an impact on their lives in ways that cannot always be anticipated. The Institute is studying the issues involved in international education and developing global collaborations at a rapid pace. A recently released report by the MIT International Advisory Committee helpfully describes guiding strategies for MIT's international activities that will allow the Institute to make thoughtful and principled decisions regarding international opportunities. Nonetheless, the proportion of MIT undergraduates who have some kind of international experience remains rather low. Although this figure has increased to 36% in the most recent senior survey, some of these experiences are brief ones during the January break. MIT is to be commended for recognizing this challenge and working hard to expand such opportunities.

Presuming that the current curriculum will not be changed in significant ways, it will always be difficult for MIT students to break away from campus during the academic year. Serious summer opportunities for study, research, or work seem to be the most auspicious option, and the set of programs under the MIT International Science and Technology Initiative (MISTI) appears to provide a valuable array of internship, research, and community service opportunities for undergraduates. The D-Lab, combining opportunities to design products and tools with public service in the developing world, seems to be an approach that takes special advantage of MIT's unique strengths and culture. The lack of a foreign language requirement or robust opportunities for the study of foreign languages and cultures may not be perceived as a particular problem by students and faculty, but it deserves some reflection in the context of trying to optimize student experiences overseas.

Graduate Education

Graduate programs at MIT are among the most distinguished in the world and have grown considerably over the last two decades. The model is decentralized with departments deciding on the size of their programs as well as on the details of student financial support. Many programs are large, reflecting the level of external funding attracted by a particular department. Funding for graduate students is more likely to be generated from research assistantships rather than fellowships or teaching assistantships, and most programs do not guarantee multiple years of funding at the time of admission (although, in practice, graduate students can expect full funding of some kind or another). The median time-to-degree, about 5.5 years, is admirable.

The enormous variety in models of graduate student financial support has motivated some among the MIT leadership to ask whether somewhat smaller Ph.D. programs that provide more reliable fellowship funding to their graduate students would not be advantageous. The Accreditation Team supports further study of this question, but it suspects that this idea will not find much support in most engineering and science departments. Many competing programs in the humanities, cognitive, and social sciences now provide five years of support (including summers), and the model of smaller programs with better funding may make sense in some of these departments. Furthermore, an increasing number of institutions are offering fellowships to the best applicants in a variety of science and engineering programs; MIT may consider developing such a program to remain competitive for the top students.

Overall, the professional development and mentoring of graduate students seem very much a part of the MIT culture, and the few graduate students we met were positive about their experiences. The “Path-to-Professorship” program for women in graduate programs seems especially innovative. One additional area for future consideration is graduate housing; about 37% of graduate students live in campus housing and the demand, especially for housing arrangements for graduate student families, is likely to increase especially given the relatively expensive rental housing market in the Boston/Cambridge area. Finally, the recruitment of minorities to graduate programs remains a challenge, although MIT is putting enormous effort into increasing the representation of such graduate students. About 40% of MIT graduate students are international, but only 5-6% are American underrepresented minority group members.

Assessing Teaching and Learning

MIT is an organization that is not hostile to assessment. It regularly uses surveys and other tools to provide input to strategic decision-making. Assessment is discussed more generally in the section of this report on Planning and Evaluation. In the context of the Academic Program, the approach can be summarized as follows: The Institute uses a variety of direct and indirect measures to assess teaching and learning. Surveys collecting self-report data are heavily relied upon,

although the quality of such data can be limited. Specific field experiments to assess pedagogical innovations, such as the TEAL program in physics, are more impressive. The Evaluation Team was appreciative of the care and attention that MIT put into the creation of the E and S forms included with their Self-Study Document. The E forms contain an array of direct and indirect measures of effectiveness, including rich descriptive data from program reviews, information about graduate degree completion, undergraduate research accomplishments, and other data. The S forms are equally appropriate in the measures of success that they have chosen to describe. These indices e.g., number of degrees awarded, data from alumni surveys and graduate student awards and accomplishments are appropriate measures of success and are congruent with MIT's mission and purpose. However, the approach to assessing teaching quality in "regular" classes remains paper-based and somewhat unsystematic. Apparently this approach will be upgraded in the near future (part of the Digital MIT project), and we encourage MIT to develop an on-line teaching evaluation/feedback system that is more robust than the present one appears to be. There was little indication in the Self-Study about how these evaluations are used in decisions concerning faculty promotion, tenure, and compensation.

The Arts at MIT

A subgroup of the Accreditation Team had a stimulating meeting with the leadership team for the arts, although we would have liked an opportunity to have discussed the humanities and social sciences as well. Nonetheless, we were very impressed by the way in which a lively arts culture has developed at MIT that captures the uniqueness of the campus environment. Undergraduates are clearly interested in the arts, and they enroll in arts-related courses in large numbers; there were 1600 enrollments last year in music and theater courses, for example, and another 600 in creative writing. Many students have a serious commitment to the arts, especially music, before arriving on campus.

The greatest concern expressed to us and also apparent to the Team is the relatively poor facilities available for arts programs, especially the performing arts. Perhaps with the exception of the Media Lab – a unique resource at MIT and one that is exemplary in its interdisciplinary approach to using technology to solve everyday and aesthetic problems – most programs in the arts are scattered throughout campus and in suboptimal buildings. One faculty member described the facilities available to the arts as "a wasteland." Another concern focused on funding, which in the arts cannot be left to extramural sources. A positive sign, however: The Accreditation Team noticed the public art program in many outdoor and indoor spaces throughout campus and was impressed by its quality and substance.

Student Concerns

The students who met with the Team clearly love MIT and generally report satisfaction with their MIT experience. The very public recommendations of the Institute-wide Planning Task Force have created some anxiety among the students, who often cannot differentiate between suggestions made in the spirit of

brainstorming from serious changes with major budgetary impact under active consideration by the administration. They worry particularly that expansion of the student body will reduce individualized contact with faculty and create a housing shortage. Further, they are extremely dissatisfied with dining options, both among students who cook for themselves and those that opt for the prepared dining options. This issue is discussed in more detail in the section of this report on Students. Students had mixed reactions to campus housing itself. Those living in an ethnic/cultural theme house or in mixed-class dormitories seemed most satisfied, although we did not interact with a large or representative sample of undergraduates.

Students complained about a “lack of transparency” in decision-making by the administration and were not sure that their service on advisory committees had significant impact on choices being made. It was difficult for the Accreditation Team to assess whether these concerns were like those typical of students on many campuses or reflected some special challenges at MIT. In any case, the student leaders articulated their views clearly and with a certain amount of passion. Some more attention from the central administration may go a long way in helping student leaders feel better appreciated.

Institutional Effectiveness

MIT places an extraordinary emphasis on teaching its undergraduates and graduates. The quality and effectiveness of its programs are of paramount importance to the faculty and the administration. There is a culture of evaluation demonstrated in other parts of this report that are ample evidence of the self-conscious approach MIT takes towards the education it provides its students (e.g., Visiting Committees that have been part of the culture since 1875, an abundance of ad hoc committees and task forces to evaluate and improve programs, curricula and to tackle problems).

Standard Five: Faculty

The Massachusetts Institute of Technology currently has 1,009 faculty members:

- 650 Professors
- 213 Associate Professors
- 146 Assistant Professors

Enhancing the educational and research missions of the Institute, as of October 2008, MIT also employed the following non-tenure track faculty:

- 544 Senior lecturers, lecturers, professors emeriti
- 148 Instructors
- 24 Adjunct Professors and Professors of the Practice

By any measure, the Massachusetts Institute of Technology has an extraordinarily distinguished faculty. Among the hallmarks of professional distinction achieved by the current faculty, we highlight:

- 66 National Academy of Engineering members
- 78 National Academy of Sciences members
- 30 Institute of Medicine members
- 7 Nobel Prize winners
- 8 National Medal of Science and Technology recipients

MIT rightfully prides itself that the Faculty largely undertake the teaching and out-of-class responsibilities essential to the fulfillment of the educational mission of the Institute. While the number of Institute employees has grown (currently around 11,500), the size of the Faculty has grown much less in the last decade (925 in 1998-99). The committee commends the senior leadership of the Institute for continuing to hire new faculty despite the recent global financial crisis. In coming years and in the face of stiff competition from peer institutions, the Institute faces both a formidable opportunity and a vital challenge to hire sufficient numbers of outstanding young faculty to maintain its status as one of the pre-eminent institutions of higher education in the nation.

Since the last NEASC accreditation report, the fraction of women in the Faculty has increased substantially: from 141 out of 925 to 198 out of 1,009. In 2009, more women than men joined the Faculty of Engineering. Empowerment, working environment and mentoring of women have improved remarkably. The fraction of underrepresented minorities on the faculty in the last ten years has gone from 8.4% to 12.4% Asians; 2.7% to 3.5% Blacks; 1.9% to 2.9% Hispanics; and the number of Native Americans has gone from one to three. Needless to say, much remains to be done not only at MIT but also in most, if not all, American universities.

In several Departments, the fraction of MIT Ph.D.'s on the faculty is quite high. While this is a legacy of the historically pre-eminent position of MIT in many fields, it is advisable to institute policies to reduce academic inbreeding. The practice in the tenure fact-finding process of allowing letters of reference from senior colleagues inside the Department is unusual and may exacerbate inbreeding.

Departmental Visiting Committees play a more important role at MIT than in many other universities. The Corporation is very actively involved in the process, selecting the committees and having its members serve in every committee. Meetings of the committees occur every 24 months. Faculty feel that, in general, the Visiting Committees play important constructive roles: lending their collective wisdom, serving as advocates with the administration, helping with fund-raising, and focusing the attention of the Institute leadership on departmental problems. Faculty with whom the Accreditation Team spoke expressed interest in seeing the Visiting Committee reports. Even at the expense of redundancy with previous reports, it would be helpful for each department to prepare a "State of the Department" report

to be included as an appendix of each visiting committee report. In the appointment of the Visiting Committees, it is advisable to seek input from the Faculty in addition to the Department head, and it is important to maintain a balance between industrial and academic leaders. Research laboratories may also benefit from external advisory committees.

It would be advisable to institute a more structured process for resolving breaches by students of academic honesty, to ensure a more uniform standard and lessen the burden on the Faculty. (It is worth pointing out that this recommendation did not come out of concern or complaint by the faculty, staff or students at MIT, but instead the process at MIT represents a departure from that found at the home institutions of many Accreditation Team members.)

The number of postdoctoral scholars is growing faster than the number of graduate students. Often, they are more cost-effective than graduate students in terms of productivity per unit cost; furthermore, they are naturally more autonomous and require less attention from the faculty member. Occasionally, postdoctoral scholars take the lead in fund-raising and graduate student advising. Departments should be mindful of the educational mission of the Institute. In awarding tenure, it is important to ascertain the contribution of junior faculty who have hired postdoctoral scholars.

The Team is favorably impressed with the ongoing program devoted to training of teaching assistants. The Path to Professorship program to train future professors is very successful but is currently limited to women. It would be advisable to fund these programs at a level that would enable all interested graduate students to participate in them. Some of these programs may be leveraged to provide training for young faculty.

Institutional Effectiveness

MIT is a leader in experimentation with new technologies to improve the effectiveness of teaching. MIT faculty collectively and individually endeavor to fulfill their responsibility to improve the effectiveness of instructional and assessment methods. Unlike other leading universities, grade inflation is not a significant issue. Regarding lecture attendance, an effort should be made to measure the correlation between absenteeism and course failure.

To ensure the fulfillment of MIT's educational and research mission, individual faculty scholarship, advising, professional and institutional service are evaluated on a yearly basis, in addition to the assessment of teaching quality through student surveys of every undergraduate and graduate course.

Standard Six: Students

Admissions

MIT succeeds in its stated goal of attracting the “most intelligent, hopeful, ambitious and irrepressibly curious students in the world.” The Institute has successfully increased the number of first year applicants by more than 30% since 2005. Applicants to graduate programs remain strong, making admission to many of these top ranked programs extremely competitive. Not surprisingly, MIT’s Undergraduate Admissions website is innovative and highly interactive. In fact, MIT was the first school to use blogs by students and admissions officers as an integral part of the admissions process, an approach now accepted as an industry standard. From the very beginning a prospective student gets steeped in the uniqueness that is MIT. Since the early 1980’s, the number of graduate students at MIT has surpassed the number of undergraduate students with current numbers reflecting approximately 6,000 graduate students and 4,000 undergraduate students. Recruitment efforts are in place for both groups to increase the number of underrepresented minority students and women who ultimately enroll at MIT. Some success has been achieved on the undergraduate front with 25% of last year’s class identifying as African American, Hispanic or Native American and 45% of the class being female, reflecting a steady increase in the past few years. MIT’s administration credits the pipeline approach that begins with an array of programs such as the MIT Science Technology Engineering and Math (STEM) Program that is aimed at talented middle school students and Minority Introduction to Engineering and Science (MITES), a challenging six week summer program designed for high school seniors, as being an important component of their success on the undergraduate level.

The numbers are not as good for graduate students. In the entering class, preliminary data indicates that only 7% are under-represented minorities and 33% are women. While these numbers represent a slight upward trend, they still fall short of MIT’s expectations and a strong focus on this area will continue. For graduate students, personal mentorship appears to be critical to attracting talented students to both these highly competitive graduate programs as well as ultimately to the academy. “Path of Professorship,” a weekend workshop for women interested in a tenure-track position in science, engineering or technology fields and “MentorNet,” an electronic one-on-one mentoring program designed to increase diversity in science and engineering, are both examples of innovative strategies sponsored by the Office of the Dean for Graduate Education that are being employed to help recruit and retain underrepresented minorities and women at MIT.

Financial support is a cornerstone of successful admissions efforts. With a 40-year history of need-blind admissions, MIT will need to examine ways to maintain this as they face the financial uncertainty that is threatening all of American higher education. It will not be possible to maintain and increase the current support to MIT students without a further increase in the financial aid budget. For 2009-10, the financial aid budget increased by 10% to \$81.6 million; similar increases will be required in coming years. While ways of increasing undergraduate enrollment

while decreasing graduate enrollment are being discussed as a strategy, it will be important to consider all possible means to achieving this, such as increasing transfer students rather than focusing only on freshmen numbers.

Retention and Graduation

MIT boasts exceptional graduation and retention rates with 98% of first year students returning and 94% of undergraduates completing their degree in six years. An important component to this success is the fact that particular attention is paid to first year students through an early warning system where students who are in danger of failing are identified and provided assistance from the variety of resources in place to help them. Graduation rates of graduate students are closely monitored as well, and retention and completion rates are uniformly high for the various schools. Roughly 90% of those entering graduate programs from 1996 – 2001 left with a degree, the preponderance of these students obtained the Ph.D. The average time to degree for doctoral programs is an admirable 5.5 years. These figures compare very favorably with the best of MIT's peer institutions, and are something to be admired.

Student Services

As a result of the Task Force on Student Life and Learning that was commissioned in 1998 and a core component of the last accreditation visit, the Division of Student Life was established in 2000 including Student Development and Support, Residential Life, Religious Life, and the Department of Athletics, Physical Education and Recreation (DAPER). This division is well established and firmly integrated into the fabric of the MIT experience working in collaboration with both the Dean for Undergraduate Education and the Dean for Graduate Education to ensure that student life in its broadest sense thrives.

The unique culture of MIT is at the core of all student services. The Office of Residential Life (created in 2007) is responsible for housing, dining, and programming within the residence halls and the fraternities, sororities and independent living groups. The housing system provides 3,019 undergraduate beds and 2,280 graduate beds in a total of 20 residence halls. After the freshmen year, housing is guaranteed for any undergraduate student who wants it and approximately ninety-five percent of undergraduate students live in MIT (or MIT approved) housing.

First year students are required to live in one of eleven facilities that enjoy the benefit of live-in faculty housemasters as well as a number of graduate resident tutors and residential life staff who provide a broad range of programs and opportunities for the residents. Students select a residence in which they would like to live and are assigned a temporary room when they arrive on campus. During the next few weeks with the help of the strong upper-class student leadership, freshmen find their permanent home for the first year. While this process sounds overly chaotic and perhaps even stressful to a new student, both tradition and the present student community endorse the approach as an important component of the

freshman experience. The Accreditation Team suggests that it may be helpful to reevaluate the current system to ensure that the outcome is worth what appears to be an overly complicated and potentially difficult process.

Fraternalities, Sororities and Independent Living Groups (FSILGs) are a large component of student life at MIT with about 45% of the undergraduates affiliated with this community of 26 fraternities, 6 sororities and 6 independent living groups. Approximately 1,100 sophomores, juniors and seniors live in FSILG housing, which is staffed by a total of 35 resident advisors. Rush for these organizations occurs within the first weeks of the fall semester, causing the team to wonder if this adds more confusion and stress to the adjustment of new students. While the recommendation at the time of the freshmen housing requirement was instituted was to establish a spring rush, this was experimented with and deemed to be punitive to the FSILG organizations. The team would suggest that this be reexamined and very strong consideration be given to moving the rush period to the spring semester so that new students have the opportunity to become fully engaged both in their studies and in their residential experiences. The committee felt that the health and welfare of the freshmen should take precedence over the stability of the FSILGs.

While dining services provide a wide range of service locations (30) from an array of vendors (three national dining contracts as well as several independent operations), there appears to be widespread student dissatisfaction with the current offerings. Not surprisingly, independently minded MIT students value the option to cook for themselves and believe this should be supplemented by the kind and variety of food options they want. While food is often a “hot button” issue on university campuses, the team was left wondering if there is an overall dining plan at MIT. It may be worthwhile to employ a dining consultant to help the Division of Student Life determine what type of food service would both meet the community needs and be feasible from an economic perspective. This seems especially crucial for the freshmen, where a common dining experience is usually viewed as a critical element of social growth.

It is evident that Student Services are highly valued and supported at MIT and integration of the living-learning dynamic is a core part of the fabric of this institution. Specifically identifying public service, leadership and athletics in addition to scholarship as primary focuses for the current Campaign for Students speaks volumes to MIT’s commitment to the experience of the whole student and they should be commended for their efforts.

Institutional Effectiveness

The Corporation Joint Advisory Committee on Institute-Wide Affairs spent 2008-09 reviewing the Institute’s efforts to implement recommendations from the 1998 Report of the Task Force on Student Life. This report identifies progress to date as well as existing challenges. Other examples of efforts to identify effectiveness include the Visiting Committee on Student Life (first created in 2001-02), and the

Task Force on Student Engagement (2007) which is identifying methods to improve communication between the administration and student body. Continued efforts on this front will assist MIT as they move forward.

Standard Seven: Library and Information Resources

MIT's library and information resources are integral to MIT's teaching, learning, and research, and underpin the educational infrastructure that prepares MIT graduates for a lifetime of learning. Within an environment that harnesses the potential of technology in creative, dynamic ways, the libraries play a critical role in building resources and providing training for their effective use and in sharing information content with the nation and the world.

True to the mission "to create and sustain an intuitive, trusted information environment that enables learning and the advancement of knowledge at MIT," the libraries focus on quality, impact, and relevance within a service culture that is quantifiable, constantly assessed, and evaluated in the context of a fast-changing environment.

Through strategic, operational, and financial planning, the Institute ensures the breadth of information resources and services required for the fulfillment of its mission.

Institutional Technology

Information technology actively supports the MIT's academic mission and the Institute is cognizant that technology is a key factor for students in selecting a school.

The Library's technology infrastructure is well positioned to provide an excellent, stable production environment as well as to enable innovative research and development of new products and services. Institutional philosophy and organizational structure are set up to underpin these goals.

Recognizing the pervasive nature of technology and the need for close communication and cooperation between technology experts and the rest of the library staff, a reorganization of the technology staff from a central Technology Directorate, into three new groups, was implemented in 2008. Under this new structure, Technology Operations is responsible for production systems and technology-based services, and is part of Information Resources (acquisitions, cataloging, serials, collection management, and archives). Technology Services' staff work closely with MIT faculty and students to develop new technology-supported educational and research initiatives; they have direct user feedback on their services. Technology Research and Development researches and develops new technology-based systems and services.

This rational library technology-staffing model supports both opportunistic and planned growth across systems with appropriate oversight. The philosophy behind

this new model is “efficiency and accountability,” a prevailing MIT Libraries philosophy.

Within MIT, the Library convenes and provides leadership for the Academic Computing Coordination (ACCORD) initiative, which is designed to ensure that all campus providers of academic computing services work together in a cohesive and transparent manner to offer faculty and students seamless and responsive service.

Training and Support in the Use of Resources

Responding to a recommendation of the faculty “Task Force on Student Life and Learning” (1998) the Libraries developed a program to become more engaged with the teaching activities at the Institute. A technology and video-enabled classroom has been developed and courses are increasingly available around the clock on the Web. Partnering with faculty and the Teaching and Learning Laboratory, a multi-year assessment effort was launched to determine the impact of embedding these learning modules into the curriculum. The Library instructional staff began an initiative to assess the effects of library instruction related to other courses. The pilot includes 154 undergraduates involved in 14 different courses. Survey recommendations are rationalized and implemented as appropriate.

Policies and Procedures for Use

MIT’s and IT’s policies provide a framework for responsible use of the institution’s telecommunication resources, and so do the Libraries. The policies also cover the privacy of the Institute’s records. Institute Archives policies similarly address access and use of records and equipment. Working with the Office of the General Counsel, IS&T and the MIT Libraries have produced a unified online source of information on copyright that now serves as a model for peer institutions.

Access to Library Resources

The IS&T Website provides information about many MIT resources, and provides orientation sessions throughout the year. The Athena system, a centrally managed campus-wide computing environment consisting of network client workstations, servers, and printers, is available to MIT students and faculty. This scalable and secure network provides electronic course lockers, electronic tools to easily and securely deliver web pages, and software for communication among students and between students and the institution. Before commercial services were available, MIT developed Vera, to provide a network accessible, customized, gateway to the licensed electronic databases, books, and full-text journals.

Areas of Significant Progress

The 1999 MIT Evaluation for Institutional Reaccreditation process pointed to areas in Library Information Resources needing attention: improvement of library information resources, with particular emphasis on electronic access, and improvement of physical library spaces. The 2004 Interim Report cites incremental progress in these areas; significant progress is evidenced in the state of the Libraries in 2009.

Substantial attention has been devoted to supporting the needs of faculty and students: the Library shifted some of its spending from print to electronic, and ongoing special and one-time budgets were allocated for the purchase of electronic resources. Research, study, and teaching are heavily dependent on rich information resources, especially resources in electronic form; the acquisition of such resources must be sustained as a high priority.

A rationalization of the physical collections with emphasis on use of materials and services has helped cope with space constraints; library spaces were effectively renovated to reflect new study and teaching needs.

Responding to the economic downturn, two of the branch libraries have been closed. Further consolidation of libraries, most notably, the Engineering and Science Libraries, would strengthen intellectual integrity and lead to operational savings that could be applied to the ongoing acquisition of information resources. For this, however, some up-front investments would have to be made in terms of space.

Institutional Effectiveness

The MIT Libraries routinely reinvents itself, rethinking past practices and developing new services and capabilities. Ongoing assessment and planning reflects the Institute's emphasis on user-driven input for innovation, improvement, and creative change. MIT Libraries surveys are impressive in design and coverage. Especially effective is the way in which the surveys utilize links within the survey and provide a list at the end of the survey that highlights many of its resources and the "innovations and improvements" section that asks users to rate the importance of service, improvements, and expansions.

In 2005, in partnership with the office of Institutional Research, the Libraries conducted a major survey of faculty, undergraduates, graduate students, and research staff, with the goal of getting information about the community's awareness, use of, and satisfaction with the Libraries' services.

In February 2009, a Planning Task Force was formed to identify and assess opportunities to reduce costs for FY2011 and beyond by finding ways to maximize the efficiency and effectiveness of day-to-day operations. The Task Force has sought input from across the MIT community. The Task Force launched the Idea Bank, a website where community members could make suggestions to cut costs and improve efficiencies, and also comment on the suggestions of their peers. More than 1,000 suggestions were received.

As a core academic unit, the Library benefits from input, advice, and guidance from its Visiting Committee.

Standard Eight: Physical and Technological Resources

MIT has focused attention on physical spaces associated with interdisciplinary research and student life in the past ten years. This includes six new academic buildings for a total of 1.7 million gsf of research space, a new residential building of 275,000 gsf, a new athletic center of 125,000 gsf and parking for 1,105 cars. In addition, 1.3 million gsf of existing academic, classrooms, administrative and residential space has been renovated. These efforts have improved the sense of campus community.

Furthermore, the Vassar Street corridor has been reconstructed, creating an improved pedestrian way through this part of campus. MIT went unwired in 2004-2005 and launched the MIT Regional Optical Network in March 2008 to accommodate faster technologies and upgrades connecting MIT's campus to Washington, DC, New York and Baltimore.

New management teams in the Provost's and Executive Vice President's (EVP) Offices including the staff of the Facilities, Campus Planning, Engineering and Construction Department, have initiated a "workstreams" effort to inventory, analyze and estimate future needs.

In the last ten years, 225,000 gsf of classrooms have been renovated, including an innovative studio format called Technology Enabled Active Learning (TEAL), replacing large lectures with interactive, collaborative pedagogy and incorporating desk-top experiments and visualization/simulations. Failure rates in the required introductory physics courses were reduced from 12 to 4 percent when using this format. Despite the cost and concern with long-term sustainability of this model, efforts should be made to expand this initiative, as well as ensure that other experimental educational initiatives can be explored.

Despite prior accreditation focus on the need to address deferred maintenance, the backlog of deferred maintenance at MIT has increased from \$400,000 reported in 1999 to \$1.4 billion reported in 2008 based on 2007 dollars. A Comprehensive Facilities Audit completed in 2007 by Vanderweil Facility Advisors reports that numerous campus buildings are in "Poor" condition including the Main Group, the buildings comprising center of campus. Although annual funding of \$34 million has been dedicated to facilities and capital renewal, this is insufficient to maintain the current state let alone to improve conditions. As a result, without drastic action, the deferred maintenance backlog will continue to grow.

Furthermore, additional focus and resources need to be budgeted for sustainability and conservation initiatives to immediately reduce operating costs, in particular, for investments with shorter paybacks. The Undergraduate Association has taken initiative in this area and can support staff efforts.

With the significant addition of new and newly renovated space, additional funding for preventative maintenance needs to be budgeted to extend the useful life of these recent significant investments.

The EVP's and Provost's Offices have instituted a Model for Integrated Planning which includes a Committee for Review of Space Planning (CRSP). This body will annually make decisions and recommendations on projects and assignments related to space planning and capital projects.

In addition to space planning, the utility and technology infrastructure needs require attention and budgeting to insure reliability as the Institute continues to grow.

Institutional Effectiveness

Given the stature and #2 national ranking of the School of Architecture and Planning, the Evaluation Team recommends that MIT take advantage of its own faculty and involve them in an advisory capacity to assist in the creation of a unified campus experience rather than the current collection of individual buildings without the connective landscape defining MIT's boundaries.

Standard Nine: Financial Resources

As one of the nation's great educational institutions, MIT has high expectations for its teaching, research and other activities. MIT has the financial resources to support these expectations. MIT's endowment of \$8 billion is among the nation's largest, as is its over \$1 million in endowment per student MIT is one of less than a dozen universities whose debt both Standard & Poors and Moody's rate AAA.

MIT has a diversified resource base, including, in FY 2009, \$217M from tuition net of financial aid, \$691M in sponsored research revenue, \$556M in endowment distribution, \$158M in current use gifts and \$243M in other income.

MIT has weathered the recent crisis in the economy and the financial markets and has in place a comprehensive financial planning process and an inclusive Task Force to prepare for any necessary budget readjustments. The 2009 fiscal year was the first in many where the year began with a balanced budget. Cuts to the budget made for 2010 have given the Institute about half of what it needs to re-balance. Additional cuts are expected for the 2011 fiscal year. These cuts will come from the Task Force process and administrative decision-making. The Institute's endowment, like many educational institutions, suffered a loss of approximately 17% during FY 2009.

MIT's Provost administers a thorough budget process insuring the use of financial and other resources in a way consistent with the Institute's academic mission. The Executive Vice President works in close collaboration with the Provost. The Executive Vice President and the Provost have put in place a staff that, working

together, provides the analysis needed to understand the financial implications of decisions.

MIT is committed to being one of a small group of universities that is need-blind and full need in its financial aid policies. MIT has projected the cost of these policies and the sources of revenues necessary to support them. In October 2008, the Institute launched a \$500M Capital Campaign for students. Over 70% of this goal has already been raised. Overall, new gifts and pledges have ranged from \$200M to \$440M, with \$350M raised in the difficult 2009 fiscal year.

The Corporation of MIT has a documented set of by laws providing for the orderly evaluation of new members (Membership Committee), continuity (terms of 5 years) and renewal (a 3 term limit). The Corporation meets at least four times a year. The Executive Committee of the Corporation meets with Senior Management monthly, at which time it reviews financial progress and plans.

MIT has a long history of unqualified annual audits from the firm of PriceWaterhouseCoopers. The Corporation has an audit committee charged with the review of the external financial audit and the reports of the Internal Audit function. The board and senior management create an environment of high ethical standards for the Institute, including oversight of endowment investments.

Institutional Effectiveness

MIT has a unique Visiting Committee process. Over 30 visiting committees are constituted on an ongoing basis. Each visiting committee makes a report to the Executive Committee, including senior management and the unit being evaluated, every 2 years. A member of the Corporation chairs each Visiting Committee.

In addition to its regular policies for budgeting, planning, and compliance, MIT has recently added an Office of the General Counsel, which provides an additional resource for oversight.

Standard Ten: Public Disclosure

In an increasingly web-based environment, the home page is often a patron's first encounter with resources and services that are offered and is always a resource in support of a patron's research needs. Currency, content, and functionality must be fully reflective of the Institute's offerings.

MIT's web presence is guided by its long-standing commitment to open sharing of knowledge. In compliance with NEASC's public disclosure standard, the information on MIT's website is built with the aim of allowing students and prospective students to make informed decisions about education.

Students can apply to MIT via My MIT website. The admissions blogs illuminate the admissions process and give a sense of what it is really like to live and study at MIT. This gives prospective students an opportunity to join a community centered on

MIT and ask questions, comments, etc. MIT World is home for lectures and discussions videorecorded at MIT.

MIT's Open Course Ware (OCW) pioneers open knowledge sharing with the entire MIT curriculum of syllabi, lecture notes, and assignments (including translations sites) made freely accessible to the world. The OWC example has sparked a publication model for universities around the world.

Institutional Effectiveness

A network of administrative offices and departments verifies the accuracy of information published each year.

In the 1999 accreditation evaluation, the MIT website was criticized for not rising to the expectations of MIT excellence. In 2002-2003, an open-source substantial redesign was undertaken, inviting all reviewers of the site to submit information for the website. In 2007, a communications survey of the MIT community rated the Institute's communications as good with overall agreement that the central website should be improved and expanded. Usability was substantially increased through the installation of a new search engine, built by Google, allowing a direct path to MIT's many websites. Respondents to the 2007 communication survey saw the homepage as "the most valuable MIT online resource."

A communication advisory group was convened to evaluate communication programs on campus.

Management of the MIT homepage was transferred to the MIT News Office in 2007. A new MIT homepage and MIT News site with new functionality will be introduced in stages beginning in September 2009. The goal is a path for communication that is bidirectional, interactive, and fine-grained.

Standard Eleven: Integrity

MIT firmly believes that as an institution whose core mission is dedicated to the advancement of knowledge and education of students in science and technology, integrity must be inculcated in everything they do. The Policies and Procedures website provides a comprehensive resource for faculty and staff on topics ranging from faculty rights and responsibilities to general employment policies and relations and responsibilities within the MIT community. The information here is clear, direct and easily accessed. Integrity is clearly emphasized for students as well. The *MIT Bulletin*, *Mind + Hand + Book*, the online student handbook and the *Integrity Handbook* all offer guidance for students surrounding issues of academic integrity. All schools within the Institute have additional measures in place as well. The Ombuds Office is an Institute-wide resource offering independent, confidential and unbiased advice to any member of the community. Students, staff and faculty participate on over 30 committees that are designed ensure a broad and transparent discussion of important policy areas. These committees, which are

appointed by the President and the Corporation, allow participation on all levels of institutional leadership.

The Committee on Race and Diversity is an Institute-wide group made up of students, faculty and staff who were appointed by the President. The committee's charge is to assess the MIT community environment and suggest goals and strategies for addressing racial issues on campus; develop and sponsor community initiatives to advance race relations and award grant funds; sponsor community-wide events and forums; and advise the MIT administration on matters that arise. This committee has been instructed to think boldly and holds firm to the belief that money is not enough to attract the best and the brightest; MIT must strive for an environment that enables its very talented community members to contribute in truly meaningful ways.

Institutional Effectiveness

It is clear that MIT intends to maintain and continue to assess all its efforts surrounding integrity. There is a true belief here that this is at the core of everything they do. The team encourages on-going assessment and revision as necessary.

Institute Effectiveness and Evaluation Summary

Institutional Effectiveness

MIT has a history of appointing ad hoc committees and task forces to study issues that rise to prominence. These deliberations not only show their commitment towards improvement, but they are based on the collection and analysis of data to find solutions, to enhance curricular innovation, and create new research and teaching programs. The historic Visiting Committee process is the backbone of assessing departmental effectiveness. It is well embedded in the culture and provides an opportunity for the administration and the outside evaluators to assess each department and some administrative areas every two years. At the undergraduate level, all of the degree programs share well-articulated measures of success and effectiveness. Of particular note is the successful innovation in teaching introductory physics that has had a major impact on the educational success of students enrolled in this course.

Although it is true that there is less attention to measures of success at the graduate level, the Accreditation Team does not feel that doctoral programs lend themselves easily to the same type of evaluation as undergraduate degree programs. Of particular note are some programs directed at the success of graduate students: Path to Professorship and the Teaching Certificate programs. These are excellent examples of the innovative approach the Institute takes towards improving their students' educational opportunities. Graduate students at MIT have a remarkably fast time-to-degree. The Team felt that this alone is a mark of a successful educational process.

Summary

We found the MIT community to have a strong, shared sense of mission. This permeates the entire culture and community and is apparent in the energy and dedication to excellence and innovation we found among the faculty, students and staff with whom we spoke. The commitment to education, at both undergraduate and graduate levels, is extraordinary. The faculty are engaged in active evaluation of their curriculum. They are very active participants in the teaching of undergraduates to a greater extent than at many other institutions since faculty handle many sections themselves. Their strong commitment is apparent in the changes made since the 1999 review. The institutional commitment to improving the diversity of the faculty and graduate student populations is apparent in the programs that they have for enhancement. MIT has transformed the atmosphere for women faculty and students.

Students at all levels are receiving a rich and comprehensive education at MIT. The Accreditation Team had no academic concerns whatsoever. The library facilities, an area of concern 10 years ago, have been the beneficiaries of attention and are now meeting the academic needs of the community. The Institute has the financial resources to meet its teaching and research mission. Its budget is balanced and appropriate staff are in place to manage the resources of the Institute and plan for the future. Of particular note is the Task Force on Planning used to gather input for the budget reductions that will take place over the course of the next year. Ideas for budget cuts and revenue enhancement are appropriate.

The student life area has seen much improvement in the last ten years, but there are additional improvements that could be made to improve the lives of undergraduates, particularly in the area of student dining. The team recommends that the Institute engage a consultant or a food service professional from one of the peer institutions to help develop a plan for food service that would meet the student demand for personal cooking facilities while also providing an affordable set of meal plans for students who wish to participate in this option.

MIT has made some investments in its physical plant over the last decade – in particular there have been some extraordinary new buildings constructed. Significant additional resources need to be brought to bear on the problem of deferred maintenance. This is an area that was highlighted for attention 10 years ago, and while there has been some attention paid to these repairs, there is still a great deal of work to do. The Institute needs to develop a budget to deal with the backlog of maintenance as well as an annual budget to help them sustain maintenance activities going forward.

In summary, the Accreditation Team was impressed by the quality of the faculty and students at MIT. The administrative organization includes individuals who can help the President guide the institution appropriately to maintain its position as one of the pre-eminent institutions of higher education in this country.