

MASSACHUSETTS INSTITUTE OF TECHNOLOGY



# MIT in Transition

Student Perspectives on MIT's Legacy Strengths,  
Emerging Challenges, and Future Directions

Final Report  
*of the*  
Student Advisory Board to MIT President Hockfield

April 2005

<http://web.mit.edu/committees/sab/>



<http://web.mit.edu/gsc/www/>



<http://web.mit.edu/ua/www/>



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# Preface

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**Charge, Membership,  
Process & Introduction, and  
Acknowledgements**



## Charge of the Student Advisory Board

During her transition into the role of MIT's 16th President, Dr. Susan Hockfield actively sought to engage the MIT student body through an advisory group led by the Graduate Student Council and Undergraduate Association. This group, formally known as the Student Advisory Board to MIT President Susan Hockfield, was charged with three essential tasks:

1. To provide MIT's 16th President, Dr. Susan Hockfield, with a perspective on MIT culture and community, challenges and opportunities facing MIT, and qualities and priorities of MIT students.
2. To develop a vision for the future of the MIT student experience.
3. To act as a vehicle for students to voice their opinions.

In many ways, this report represents a snapshot of the many facets of MIT experience, and what we might work towards for the future, from the student perspective.

## Membership

The Student Advisory Board was led by co-chairs Barun Singh (Graduate Student Council President, 2004-05) and Harel Williams (Undergraduate Association President, 2004-05).

Over 110 MIT students applied to be members of the Student Advisory Board. Final membership of the group was selected by the GSC and UA Presidents and Vice-Presidents, after an interview process. Individual members were chosen because they were motivated, excited and open-minded. The group as a whole was chosen to represent the diversity of the campus. A list of final membership is given below.

### Graduate Members

Barun Singh, *EECS*, (Co-Chair)  
 Hector Hernandez *Chem*, (Co-Vice-Chair)  
 Andrew Brooks *EECS/MAS*  
 Benjamin Crosby, *EAPS*  
 Elizabeth Kwack, *Arch*  
 Emilie Slaby, *WHOI*  
 Eric Jonas, *BCS*  
 Joost Bonsen, *Sloan*  
 Michael Folkert, *HST*  
 Michael Shirk, *Sloan*  
 Satwik Seshasai, *ESD*

### Undergraduate Members

Harel Williams '06, *EECS* (Co-Chair)  
 Rose Grabowski '05, *CMS* (Co-Vice-Chair)  
 Farah Ghniem '07, *CEE*  
 Janet Lieberman '07, *MechE*  
 Mary Williamson '06, *EECS/Sloan*  
 Neel Kantak '05, *EECS*  
 Patrick Desuza '05, *EECS*  
 Shreyes Seshasai '08, *EECS*  
 Sid Puram '05, *Bio/BCS*  
 Susannah Dorfman '05, *EAPS*

## Process and Introduction

This Board has attempted, to the best of our ability, to capture within this report the views of the student body as a whole. Where students do not agree on an issue, the variety of student opinion has been expressed. Student input was solicited through a number of open forum discussions and through electronic feedback. Over the course of five months, the Board held four lunches with President Hockfield to discuss the topics within this report and submitted to her a briefing paper prior to each of the lunches. These briefing papers were made publicly available and student feedback was requested on them. The content in this final report is

therefore a combination of information from the briefing papers, student input and feedback, and discussions held with President Hockfield.

In surveying the past and considering the future of MIT during this period of transition, three overarching themes emerged. The first of these is the central role of academics, research, and professional development - our principle reason for being at the Institute. Second, the powerful impact of our community experiences in shaping our growth as individuals outside of the lab and classroom. The final theme embraces the Institute as a whole - integrating the short and long term and connecting everyday action with the big picture.

## Acknowledgements

We wish to acknowledge the many students, faculty, staff, alumni, family-members, and friends who spoke with us, both formally and informally, as we sought to craft this Perspective and prepare for our interactions with President Hockfield. We would also like to thank President Hockfield for engaging the student body throughout her transition into MIT through the creation of this Board, and Kirk Kolenbrander, Senior Advisor to the President, for his work in facilitating the process. Thank you.



# Section I

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## Academics, Research, and Professional Development

*“The mission of MIT is 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.”*

— MIT’s Mission Statement

The role of the Institute, first and foremost, is to generate knowledge through research, provide students with an unparalleled scientific and engineering education, and to inspire service and contribution to society. In the areas of academics, research, and professional development, the following topics touch upon MIT’s pursuit of its mission:

1. **Admissions** – The notion of the “typical” MIT student, graduate or undergraduate, continues to evolve. The Institute must continue to recruit the most promising students and strive for an appropriate and well-considered balance in its student body in terms of demographics and academic interest. In addition to more closely involving current students in the admissions process, MIT would benefit from a more systematic and strategic approach to graduate admissions.
2. **Curriculum and Programs** – MIT students pride themselves on fulfilling the intensity and dedication to their studies that the MIT demands. The Institute needs to re-think the role and content of core requirements, however, paying close attention to balancing quality and quantity of the student workload. Furthermore, MIT should increase its emphasis on exploratory classes and offerings, which have a powerful role in allowing students to most fully develop their academic selves.
3. **Faculty Issues** – Faculty are the conduit of knowledge between classroom learning and actual “hands-on” research. Students worry, however, that the Institute assesses and values faculty educational contributions rather less than their research output. Especially pressing is the need for caring mentors, inspiring educators, and a real commitment to bolstering the diversity and retention of promising up-and-coming faculty.
4. **Professional Development** – In order to succeed in its mission, MIT must inspire and educate leaders and entrepreneurs, as well as scientists, engineers, and practitioners of the many creative arts and disciplines. More effective leadership programs must be put in place, perhaps building upon lessons learned from our most exploratory departments and schools. Career resources and advising are especially crucial for those interested in non-academic pursuits. Alumni remain a powerful and yet underappreciated potential resource for current and graduating students.
5. **Research** – Mentoring and learning-by-doing experiences are the hallmarks of the MIT experience. MIT can still do more to encourage higher levels of excellence through better attention to the advising relationship, increased awareness of opportunities, and offering greater exploratory freedom to new students.
6. **Resources for Research and Education** – The Institute cannot expect its creative output to be sustained without ongoing assessment of space allocations, size of support staff, and information sharing. MIT must more effectively use its resources, especially educational space and serendipitous extracurricular space, in order to meet the needs of our dynamic institution.



## I.1 Admissions

### **Creating our Student Body**

The process and criteria by which new members are invited into the community play key roles in defining what MIT is as an academic institution, and setting the direction in which the Institute will move. The quality and range of applicants increases with each incoming class. In order to maintain the MIT level of excellence, standards and policies must be refined. With average test scores and GPAs rising throughout the country, MIT may wish to place more emphasis on personal attributes and tangible accomplishments in order to identify truly exceptional students. Based on test scores alone, the quality of the MIT student body has been steadily improving over the past several years; however, it is evident in the classroom that some students are not well prepared for the level of academic rigor that is expected. MIT has historically searched for the hardworking techie, but many students perceive a recent shift to select more well-rounded students, perhaps to create a more diverse and balanced student body. Although there is no one model of an MIT student, it is clear that while considering the various personal strengths that applicants may portray, MIT must not lower its overall admissions standards. An unqualified student, no matter how well-rounded, should not gain admittance simply for the diversity that he/she may bring to the student body.

### **Graduate Admissions**

The decentralized nature of the graduate admissions process and the lack of a central graduate school have both positive and negative ramifications. Locally, within departments, the additional flexibility allows for more aggressive and successful recruitment. On an Institute-wide level, this same flexibility makes it difficult to meet diversity goals, to contain the size of the graduate student body, and to regulate the effect of various policies on graduate student community life. Decisions are often determined on the basis of departmental finances rather than long-term strategy. As a result, smaller departments in which TA positions are scarce, or those departments that cannot easily get government or corporate sponsorship, often find themselves unable to grow in a manner that is in line with their long-term objectives.

Internal fellowships, such as the MIT's one-year Presidential Fellowship, offer tremendous support to incoming students and junior faculty. The Institute must maintain and augment these fellowship programs both in order to attract high caliber students and to assist junior faculty in building strong research programs that will garner future funding.

### **Cross-Cutting Diversity Efforts of the Institute**

Under Presidents Gray and Vest's tenures, MIT has embraced initiatives to increase diversity among all levels of our population. On the whole, these efforts have been much applauded, though they have also resulted in a great deal of confusion. In particular, many do not understand MIT's policy regarding affirmative action. To alleviate the misconceptions and emotions associated with this topic, MIT must more effectively communicate its diversity goals to its student population. An assessment of where we are, where we want to go, and how we plan to get there is one way to start.

Many students believe the Institute has not yet reached a desired level of diversity, particularly at the graduate and faculty levels. In addition, it is unclear what diversity truly means from a practical standpoint. Recent decreases in international student applications and admissions-limits are considered by many to be detrimental to student life and learning. MIT may therefore want to consider a more holistic definition of institutional diversity that goes beyond the traditional considerations of race and gender.

While diversity is commonly accepted as an appropriate goal, MIT students also believe very strongly in the meritocratic ideal. New programs and policies must not come at the expense of diluting the meritocracy that currently exists at the Institute.

### **Student Involvement**

At both graduate and undergraduate levels, the role of currently enrolled students in the admissions process could be broadened and strengthened. Students are positioned to provide unique feedback on individual

application packages, including distinguishing between points of embellishment and true character in an application, and also the success of previous years' admissions processes. In order to truly engage students in the admissions process, the chance to review applications must be accompanied by an ability to influence the final decision to accept or deny.

Visiting programs which connect current graduate students with accepted applicants would be a valuable recruitment tool if extended broadly across all of the Institute's departments and programs. Too often accepted students are provided with an unbalanced understanding of an MIT graduate education. If visiting programs in the Spring as coherent and cross-cutting as Fall Orientation were initiated and nurtured at the Institute-level, MIT's competitiveness relative to its peer institutions would greatly increase.

There is a vital community-building element to student involvement in the admissions and post-admissions process. Many students want the opportunity to shape their communities, and are willing to accept the associated responsibilities. Within graduate departments where student input concerning admissions is actively solicited, one can observe a much tighter knit graduate community. In addition, the strength of pre-existing communities can play a significant role in the admissions process, as demonstrated by the positive impact that both Campus Preview Weekend and successful lab visit days have on recruitment.

## I.2 Curriculum and Programs

### Acclimation Programs

Acclimating to the academic challenges of MIT is a difficult task for many freshmen. For this reason, MIT has a number of programs that seek to ease new students into their collegiate academic life while engaging their curiosity to explore new subjects. Examples include the freshman Pass/No Record grading system and the sophomore exploratory subjects.

The Pass/No Record system provides students with the opportunity to gauge the difficulty of an MIT course load and to adjust their expectations without the pressures of dealing with grades. Instead of panicking after a poor performance, a student can learn from his or her mistakes and has a semester to work towards improvement. Many students believe that this program is well devised to provide a better transition to the coursework of MIT. Some others, however, believe that it provides a disincentive for students to perform up to their full potential when they first arrive, leading to increased difficulties in the following semester once they are graded normally. MIT must continue to strive to enhance the transition process for incoming students to encourage them not only to adjust, but also to excel for the remainder of their academic career.

The curriculum at MIT must also nurture the difficult transition into an extremely intense environment beyond the first semester. Exploratory courses offer a chance for students to try something new without worrying about the implications of a negative grade on their transcript. This prompts students to challenge themselves with classes they might otherwise consider too difficult, allowing them to further develop their academic abilities. The Institute should consider offering upperclassmen the same exploratory option. This move would allow students more latitude and encourage them to take academic risks that might pay off in the long-run.

### Undergraduate Course Requirements<sup>1</sup>

The idea that all MIT undergraduates should receive grounding in mathematics, science, laboratory work, and humanities is a core value of the Institute. This grounding comes largely in the form of General Institute Requirements (GIRs), which encompass a set of 17 subjects to be taken by all undergraduates that include everything from physics to anthropology. Though students generally agree that obtaining a breadth of knowledge is important, many believe that there is room for further improvement of the GIRs.

Because they are required to take several courses unrelated to their chosen field of interest, students lose the opportunity and flexibility to thoroughly explore their majors. MIT should carefully consider which classes truly represent the intersection of all majors, of all students, and of all types of knowledge. These common threads must tie students together academically, serving as a source of intellectual strength across the Institute. In addition, too much breadth of curriculum may come at the cost of quality, causing material to be simplified so that all students may comprehend it. Equilibrium between a reasonable breadth and true depth of knowledge must be reached.

Some students believe that existing GIRs face tactical problems. For example, within the school of Humanities, Arts and Social Sciences (HASS) undergraduates are required to take three classes (called HASS-Ds) that fall into three of five different categories, as determined by a lottery. Students find this requirement too restrictive, the selection of classes too small, the lottery system too limiting, and agree that an effort to give students more of a choice would likely enhance appreciation of these subjects. In addition to the HASS-Ds, students must take two Communication Intensive (CI) courses within the HASS (plus two CI courses within their major). While students acknowledge the importance of communication skills, many see the current structure of CI classes as having arbitrarily added assignments that do little to help them improve their communication skills. Communication skills could be better developed in the classroom by emphasizing peer-review, smaller class sizes, and greater interaction with professors.

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<sup>1</sup> The Task Force on the Undergraduate Educational Commons is currently in the process of reviewing the undergraduate course requirements

In addition to reexamining the existing structure, some students believe the Institute should consider ways in which new courses might be included in the GIRs. In particular, MIT is one of the few institutions that do not require all students to take a foreign language, and it has been suggested that creating such a requirement might better prepare students to become leaders on the international level. Some have suggested the creation of required curriculum that relates to diversity, in order to enhance students' appreciation of other cultures. However, others argue that such a GIR would face implementation difficulties and that the addition of such a requirement to students' already intense course load might actually promote disinterest or disdain for the topic altogether.

Outside of the GIRs, course requirements vary widely within specific majors. Some departments, such as computer science or chemical engineering, create rigid schedules for their students while others, such as biology or math, have fewer requirements, thus giving their students an opportunity to explore and to define their own personalized path. In general, students prefer flexibility in their program, and some are deterred from fields that are too rigid.

### **Intensity**

Although MIT students acknowledge the difficulty of their course loads, most students take much pride in the dogged intensity with which they pursue their studies. Within the context of curriculum, the effect of intensity on the quality of learning must be evaluated. Intensity can prepare individuals for challenges posed later on in life; however, it can also come at the cost of true interest in a subject and may cause or aggravate mental health problems. Intensity in classes sometimes is a result of difficult questions and conceptual ideas, while at other times a product of the sheer volume of the material. MIT students are always up for a challenge, but the quantity of expectations created by an MIT course load can be overwhelming. The Institute must remain vigilant in balancing quality with quantity, in order to steward students' intensity in the most productive way.

### **Accountability and Evaluation**

Thorough, regular academic reviews of all components of the curriculum are essential to continued excellence. For the most part, the curriculum currently in place is accepted without question. Concerns are often answered with arguments based on tradition or a broad scale of learning. However, without serious student and faculty input, the administration cannot clearly gauge the effectiveness of its programs. Greater attention must be paid to the review and evaluation of the curriculum, particularly from the students who enroll in and help teach the courses.

## I.3 Faculty Issues

### **Faculty Development & Student Education**

Faculty members at MIT are broadly perceived to be selected and granted tenure primarily for their research abilities without adequate consideration for how well they convey ideas in an instructive and coherent manner in the classroom or beyond the classroom through mentoring. Students believe there is a need to further improve the process of knowledge exchange in the classroom and develop improved metrics for evaluating the communication skills and educational techniques of professors. Given that not all students learn in the same fashion, professors must explore teaching styles that adapt to their students' needs. Departments must do a better job of evaluating professors via objective methods that take student input into account. These evaluations must, in turn, be used to improve the student educational experience.

### **Undergraduate Academic and Residence Based Advising**

Currently there is no established, rigorous system that provides undergraduate students with a comprehensive program for curricula development. Instead, students often use academic advisors as rubber stamps for program selections that have been achieved without professional guidance. This creates an interaction between a student and faculty member that will never reach its full potential. In order to solve this problem, the Institute needs to provide incentives and training for good mentoring and must encourage faculty to consider the individual needs of their advisees.

The Residence Based Advising (RBA) program is an effort to improve academic advising for freshman by incorporating a student's residential community into the process. Through this program, incoming freshmen who live in specific residence halls (Next House and McCormick) are placed into advising seminars taught by academic professors and other members of the MIT community. These seminars provide students with weekly direct interaction with their academic advisor, along with the opportunity to discuss issues in a comfortable setting with the other students in the advising group. The program also formally incorporates upperclassmen who live in the residence halls. These Residence Associate Advisors (RAAs) not only act as mentors but also enrich the community within the dormitory by planning regular events. They provide an invaluable asset to incoming freshmen seeking advice and also act as conduits to various resources such as the Academic Resource Center and MIT Medical.

The RBA system has a positive impact in strengthening the support network provided to new students, and its expansion would be a great supplement for more freshmen to enhance their initial experiences with the Institute. Limited resources, however, may make such an expansion impractical or undesirable if enough professors cannot be found to actively participate. It is also important to recognize that an RBA style of advising does not appeal to all freshmen. Besides the time commitment of the seminar, some freshmen believe that general interaction with upperclassmen in the dorms already provides a support structure which would not be greatly advanced by a formal RAA. Many dorm residents also believe that the RBA program is detrimental to dorm culture, because it requires students to pre-select a dorm that has the program and remain in it, thus preventing students from participating in the "dorm rush" system. It is important for the Institute to continue to inform freshmen of the commitments required by the RBA program and allow them to choose which residence style best fits their needs. MIT should further explore Residence Based Advising, but keep a watchful eye on potential unintended consequences of the program, particularly to its impact on the character of each residence culture.

### **Faculty Retention**

Faculty retention directly affects student education and life at MIT. The student experience is adversely affected when the Institute loses well respected professors to competing universities, as recent visible cases exemplify. The students who are mentored, and the graduate students who have to disrupt their lives, suffer from the vacuum that is left by a professor's departure. MIT must identify methods of retaining excellence at the faculty level.

**Faculty Diversity**

Many arguments are made concerning the need to increase faculty diversity. From the student perspective, one relevant argument that is often overlooked is that a truly diverse faculty would do much to dispel the perception that engineering, mathematics, and the sciences are white male fields of study. Underrepresented minorities and women, for example, rarely if ever have engineering and science professors that are from their race or gender, respectively. The student body on a whole would be able to identify with and better relate to a faculty that is more a reflection of itself. Of course, the most important thing is that the faculty deeply cares about student life and learning.



## I.4 Professional Development

### Leadership Programs

Leadership includes not only skills to be taught but a lifestyle to be embraced through experience. While this is recognized in some aspects of the MIT community, there are further opportunities to develop and expand *practical* leadership development programs. A more formalized, holistic process, linking leadership opportunities in community life and academics, might benefit not only MIT's students, but the community at large.

There exists the old adage that MIT graduates work under Harvard and Yale graduates. Whether or not this adage holds true, the reputation that MIT does not create leaders in industry or politics or academia is troublesome. In fact, some formal leadership development opportunities do exist. On the undergraduate level, students can participate in the Freshman Leadership Program, which is a pre-orientation experience, and LeaderShape, which occurs once a year over IAP. Graduate students in the Sloan school are able to become engaged in the Sloan Leadership Center activities, conferences, and so forth. Students who are able to participate in both the graduate and undergraduate programs speak highly of their experiences. Yet the opportunities remain very limited, and are insufficient to meet the need.

The majority of students develop their leadership skills primarily through their roles in living groups, student groups, and student government. The contributions of these extra-curricular activities to students' professional development must not be overlooked. At the same time, there is a desire among many students for more formalized methods of developing oneself as a leader that can go beyond the opportunities offered by extra-curricular activities. Perhaps it is time for the Institute to embrace as one of its central values the notion of creating leaders, not only in academia and research, but in all aspects of life.

### Non-technical Development

Many students, graduate and undergraduate alike, do not believe they are provided sufficient opportunity to learn the "soft skills" they believe are critical to their future success, such as communication and presentation skills or research ethics.

Undergraduate communication requirements have been established across the curriculum, but they do not seem to be accomplishing their goal. While students recognize on a conceptual level the need to develop their communication skills, few are able to establish the practical relevance of their required communications classes to their line of technical study. In addition, the teaching of non-technical skills, such as effective communication, must be done throughout the educational process rather than only within one specific course. This requires a system of feedback from not only course professors, but also peers and, particularly for graduate students, research advisors.

### Career Advising

Many graduate students feel that there is an insufficient focus on career advising for non-academic pursuits, and some believe that the faculty overall do not respect such pursuits. While there are some formal resources available through the MIT Careers Office, there is a lack of consistency across individual departments in this area. There exists a need for more formal programs that encourage one-on-one career advising, with links to alumni, and a greater willingness to nurture students with non tenure-track aspirations.

### Alumni Engagement

MIT alumni represent a major untapped resource for career advising, mentoring, and job opportunities. Some MIT schools have been successful in engaging alumni, while others lack a real connection with even their most recent graduates. Many alumni are willing and able to offer support but do not do so because effective channels of communication with the Institute do not exist. To fill this gap, the Institute as a whole and individual departments need to create more effective mechanisms and facilitate more opportunities for communicating with their alumni base.

Such engagements can occur both through formal departmental or lab initiatives – for instance, the role alumni play in the Undergraduate Practice Opportunities Program (UPOP)<sup>2</sup> – but can also occur through extracurricular activities – for instance, the student-run MIT \$50K Entrepreneurship Competition<sup>3</sup> has a long-running Mentorship program and collaborates with the MIT Alumni Association’s Enterprise Forum on intensive presentation workshops.

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<sup>2</sup> UPOP -- <http://web.mit.edu/engineering/upop/> -- engages students in industry internship programs and draws upon alumni volunteers -- [http://web.mit.edu/engineering/upop/alumni\\_info.html](http://web.mit.edu/engineering/upop/alumni_info.html) -- as mentors, coaches, advisors, and speakers.

<sup>3</sup> MIT \$50K Entrepreneurship Competition -- <http://50k.mit.edu/> -- has inspired several thousand students to propose business ideas and has encouraged the founding of nearly 100 companies.

## I.5 Research

### **Advisor / Advisee Relationships**

There are few things that play as significant a role in a graduate student's experience as the relationship with one's advisor, yet the Institute does not currently emphasize enough the importance of faculty mentorship. A positive advisor/advisee relationship enables students to make the most out of their experience, to learn important lessons for their personal and professional development, and to find support in times of difficulty. On the other hand, poor advising can often lead students to feel trapped, discouraged, unappreciated, and unable to reach their potential.

There are a variety of positive steps the Institute could take to address these issues. New faculty must be properly oriented and trained with regards to the importance of advising and mentoring, and the Institute must create clear expectations regarding their role in training students. Best practices, such as maintaining open and honest communication, should be emphasized. Faculty should be encouraged to make their expectations clear to new advisees, with regards to both work and funding, before the start of the student's research. The Institute must find ways to encourage faculty to consider the individual needs of their advisees and mentor them appropriately, rather than merely examining the volume of their output as a research assistant.

On the other side, the Institute must also guide graduate students on how to choose an advisor with whom they will work in enjoyable and productive manner. Students should understand what will be expected of them and what they can expect in return.

Similar to the case for effective teaching, the Institute should reflect its commitment to good advising in its tenure decisions. A professor acts in the roles of researcher, teacher, and advisor. Many graduate students feel that in order to truly consider merit in terms of a professor's advising capabilities, one must solicit input from the professor's past advisees.

### **Use of the Undergraduate Research Opportunities Program (UROP)**

UROP is one of the most unique and frequently highlighted aspects of MIT's undergraduate program. Conceptually, the program has substantial strengths: students get an opportunity to interact closely with faculty and develop professionally through hands-on experience in research labs where they begin to appreciate the applications of their academic studies. Students recognize the value and significance of these opportunities, which better prepare them for the rigors of the research environment as compared to students from our peer institutions.

As with any program, there is room for improvement with UROP. Greater attention needs to be placed on research mentorship and advising. Practices similar to what is needed in the arena of graduate advising (as discussed above), such as clearly communicating expectations at the start of the research, should be encouraged. In addition, while UROP offers significant opportunities, students often have difficulty finding positions unless they directly contact a faculty member. Through improved publicity, UROP can better match students with their fields of interest and allow them to have the best possible experience. Finally, it is important that MIT continue to evaluate the most effective way to distribute funding for the UROP program, including the basis upon which the central UROP office determines which applicants to fund.

### **Graduate Research Opportunities**

One of the primary limitations for graduate research opportunities is funding, particularly for graduate students in their first year. New students given funding to work on a particular project often feel that they lack flexibility in their research, and those interested in working with junior faculty face increased difficulties in finding funding. Depending upon the department, a new student is given a variable number of opportunities to obtain funding through a teaching assistantship, which might give them additional time to search for an appropriate research group. Students with fellowships generally have the most flexibility, though many external fellowships are unable to cover MIT's large tuition. The Institute should examine the ways in which policies regarding graduate funding might be altered to allow for increased flexibility, particularly among new students.

## **I.6 Resources for Research and Education**

### **Space Investment & Planning**

MIT has undergone significant expansion and reorganization of its academic and research facilities in the past few years, and an assessment of how these changes have affected research productivity and job satisfaction should be performed. Students are concerned about MIT's broad spectrum of investment in academic, research, and professional development geographical resources. Distribution and allocation of existing laboratory and academic resources is viewed as far from optimal in many locations. Also, the manner in which laboratory groups have been moved during the process of construction has been very disruptive to the work of both students and faculty, and more active engagement of affected groups should be made part of the planning process.

Planning and construction of "educational space," such as classrooms and study areas, could better consider the union between the design of a space and the impact it has on students' ability to learn. Moreover, increased formalization of access in reserving rooms, including places in the Student Center or Sloan study space, impedes casual study and is indicative of a systemic lack of study space.

### **Serendipitous Extracurricular Space**

Space for extracurricular activity can have a substantial professional and community development role, providing an informal venue for interaction between students and faculty, visiting scholars, alumni practitioners, and the entrepreneurial community. Despite this, venues such as on-campus pubs and coffeehouses remain underappreciated at the Institute. The Institute should consider how it could better promote and actively integrate its spaces as the educational and extracurricular resources that they are, encouraging increased student engagement and professional development opportunities.

### **Information Infrastructure**

The integrity of the computing network is crucial to students' research productivity and academic study, as well as providing a medium for communication and community-building. MIT must remain at the forefront of network security, comprehensive coverage, and high bandwidth. Effort should be made to protect network resources and support staff against imprudent cost-cutting measures and forced attrition. Furthermore, the quality and availability of library offerings in all fields, and the accessibility of these resources to the MIT Community, should match MIT's commitment to making its own resources available to the world. In an era of commercialized journal offerings, library acquisition budgets are under tremendous pressure. The library system should be offered the fiscal support it needs as well as the technical assistance necessary to increase its electronic holdings, and the Institute could take a leadership role in adopting a national stance that builds upon our strengths in OpenCourseWare in support of economically sustainable open knowledge exchange.

### **Academic Support Resources**

Cuts in research and facilities support staff, such as laboratory technical staff and custodial support, have impacted the ability of students and faculty to conduct research. In addition, student academic support resources, such as tutoring, are poorly marketed and/or are only made available after a "crisis," i.e. after a student has failed a major assignment or course. MIT should work to encourage a cultural shift that promotes student willingness to seek academic support before a crisis occurs.

# Section II

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## Extracurriculars and Community Life

*“The educational triad involves treating research, academics, and community as equal contributors to the education students receive here, integrating them as much as possible to create a coherent, unified educational product not available elsewhere.”*

— MIT Task Force on Student Life and Learning, 2.2

The MIT community plays a fundamental role in the inspiration and development of students who will use their talents and knowledge to change the world for the better, acting as de facto ambassadors of the Institute’s mission. MIT’s living groups, student organizations, communal facilities, and student life programs all play a fundamental role in creating this rich educational environment. The following topics analyze the community’s role in student life and suggest areas for future improvement:

1. **Community Culture and Standards** – Institute culture shapes the lives and personalities of students, and is firmly tied to the living groups and organizations to which students belong. The scope and importance of students' choice in pursuing their own interests in each of these aspects, and the self-developed and self-owned nature of the culture that results, are the strengths that underlie MIT's school spirit and give us a unique creative intensity. MIT must be careful not to let organizational bureaucracy or “professionalization” diminish the powerful experiential learning and risk-taking that are crucial to forging and sharpening our innovative “MIT edge”.
2. **Extracurricular and Community Resources** – While student culture is largely shaped by students themselves, culture would not survive without the programs, financing, and general structure that the Institute provides. Given that these scarce resources are allocated for students, it only makes sense that students, both undergraduate and graduate, be involved in every step of the process and that transparency and accountability be the underpinnings of Institute expenditures. We are especially concerned by the “profitization” of the commons, the pricing of basic services, and the squeezing out of vibrant traditional providers.
3. **Orientation** – The first few months at the Institute are the most formative ones for students, setting the stage for what they will be able to take away from their overall experience. Recent shifts in administration have greatly undercut undergraduate students’ ability to shape the first-year experience for their successors. Graduate student orientation, run entirely by students at the Institute level, has thrived over the past years, but remains too disconnected at the departmental level and underappreciated as a whole, leaving students in some schools or departments underserved or isolated.
4. **Personal Development** – Much of students’ personal development takes place informally through daily interactions, and is also facilitated by MIT’s “ownership culture,” in which students assume responsibility for managing their own lives. Strong support is needed for the self-governance structures that support students’ personal development outside of the classroom. The Institute would benefit from re-examining its formal mentorship programs and adding to those that act as building blocks to foster mentorship of and among students in a manner that effectively supplements their informal training.
5. **Balance** – Achieving a balance between work and life is essential to personal and professional success anywhere, and the Institute is no exception. MIT students oftentimes lose perspective of lifestyle balance when consumed by the intensity of their work and activities. Student-families can find it particularly difficult to balance their commitments. Our community needs further and ongoing efforts to promote the development of balanced lifestyles to breed responsible graduates and global citizens.



## II.1 Community Culture and Standards

### IHTFP & Intensity: School Spirit at MIT

It is a well-known adage that members of elite groups which undergo rigorous training tend to be more stressed and even resentful during the training phase, but consequently more proud of their achievements and tightly bound to other members -- even those with whom the training was not performed concurrently. At MIT, this dichotomy is commonly represented by the acronym IHTFP, whose most common two expansions represent the opposing ends of this spectrum: "I Hate This F\*\*\*ing Place" and "I Have Truly Found Paradise." It is not advisable to consider one translation without the other, and, though IHTFP is not unique to the Institute<sup>4</sup>, it remains a valuable insight into the holistically unique culture of which it is a part.

MIT students frequently feel heavily invested in MIT beyond their own financial and educational stake. They feel that the Institute's successes reflect on them and theirs reflect on the Institute. In this respect, the IHTFP phenomenon is a mirror of the range of feelings many MIT students experience about themselves during their time here. The intensity of the Institute drives students to personal successes that give them great pride, and seemingly interminable, grinding slogs that can make students question their fitness even to be in attendance. These extremes -- and everything in between -- contribute to an esprit de corps that can be hard for outsiders to gauge, often appearing sardonic or absurdist; for example, MIT's distinctive gold beaver ring is colloquially referred to within the Institute as the "Brass Rat."

The intensity of the MIT experience is legendary -- as the popular saying goes, "An MIT education is like taking a drink from a fire hose."<sup>5</sup> As a result, MIT students have a reputation for both working hard and playing hard. Neglecting to eat, sleep and bathe can be commonplace -- often out of necessity, during final project periods, but also during "leisure" activities, such as during IAP's 3-day marathon Mystery Hunt. While this can sometimes be a matter of concern, it is a manifestation of the remarkable passion MIT students demonstrate towards both their work and their other interests. It leads them to take on challenges that others would ignore, but can also lead to emotional stress and questions of self-worth.

### Choice and MIT's Ownership Culture

MIT students care very deeply about their freedom to select and manage many aspects of their Institute life: where they live, how they eat, their social events and other activities. Informed choice allows students to find their appropriate niche within the intensity of the Institute: to adjust their comfort level at a pace that suits each individual. Students believe that not only must these freedoms be preserved, but significant effort must be directed towards ensuring that incoming students have the best possible information and environment to make the decisions that will, to a large degree, determine the support networks they will rely on during their time here.

In recent years there has appeared to be a line of thought among MIT management that has alarmed students: that student culture at MIT is insufficiently focused on MIT as a whole, and instead too compartmentalized into narrowly interacting subcultures. As a result, students perceive that their ability to make important choices, and the resources necessary to make those choices wisely, has been limited in favor of emphasizing cultural structure at the school or class level. Students see this as short-sighted in light of the very intensity and breadth of choice that is available. It is easy to feel, before classes begin, that the selection of housing and student groups is of minor importance, because there will be plenty of opportunity to spend time at other residences and groups. But in reality, time rapidly becomes a scarce resource and an all-inclusive lifestyle cannot be supported. Students believe that it is extremely important for MIT to continue to recognize and support the ability of students to take control of and inject their passion into their lives outside of class.

This is not to say that MIT's maze of opportunities is not without drawbacks which should be

<sup>4</sup> Unknown even to most MIT students, the phrase "IHTFP" has been used at other institutions such as the US Air Force Academy since at least 1956 and remains so today.

<sup>5</sup> The full saying is even more telling: "An MIT education is like taking a drink from a fire hose. You drown and your parents get soaked."

monitored. Isolationism and self-segregation remain causes for concern at MIT: students can become self-absorbed and unaware that other people's situations are in many ways not so different. More effort needs to be made to identify subcultures that should be brought into contact, and then to find means of achieving this. The "grassroots" support networks that students create for themselves are usually highly effective, but sometimes are less so – the difficulties of providing institutionalized support for activities and individuals, and in identifying the cases in which students are in need of assistance, remain challenges that need to be addressed.

### **The Role of Housing in MIT Student Culture**

It is hard to overstate the importance of housing – encompassing graduate and undergraduate dormitories, fraternities, sororities and independent living groups (FSILGs) -- to student life at MIT. Students' living selection ultimately fulfills a number of needs beyond simple accommodation: 24-hour support network, social nexus, sanctuary, study hall, and much more. Living groups play central roles in teaching independence and self-sufficiency, provide welcoming environments for many international students to adapt to a new culture, and, particularly in those cases (such as FSILGs) in which selection criteria must be met, satisfy the need to belong. For many students, their choice of living group will be one of the most important decisions they make at MIT, on par with choosing a major. In addition to different prevailing attitudes and cultures, different living groups offer variations in the amount of responsibility they give to and expect from residents, and resources for social and educational activities, such as house taxes, facilities, tutoring, and student labor. Many living options also assist their residents in forming strong bonds with alumni from years well beyond the residents' own tenancy. These alumni affirm that the bonds formed from living together are stronger than any other.

Nearly all undergraduate students live in either MIT dormitories or FSILGs while over 60% of graduate students must find their own off-campus housing. Therefore, while living groups play significant roles in both graduate and undergraduate communities, the most significant issues faced by the former (many of which relate to availability and cost) differ greatly from those faced by the latter (such as rush, the role of FSILGs, etc.). Here we focus primarily on those issues faced by the undergraduate residences, and Section II.2 provides more information on graduate housing concerns.

When undergraduate residence selection is mentioned, many people think of the process formerly known as "rush". Since the implementation of the decision to house all freshmen on campus, FSILG rush no longer exists in its prior form. Many FSILGs have struggled to maintain recruitment numbers under the new housing system, and the ones who have been successful still face enormous challenges to maintain their community with their youngest members living elsewhere. To dormitory residents "rush" also refers to dormitory selection, and is therefore an equally important process. Dormitory residents are extremely concerned that the removal of FSILG rush from the orientation period has caused "dorm rush" to be neglected, as students will have to fill the dormitories anyway. A lack of official support and adequate time for dorm rush leads students to worry that incoming students will underestimate the importance of residence selection, and that the residential cultures will suffer from this lack of concern for optimal placement. At the same time, FSILG rush needs to be supported as these cultures form a unique and important counterpart to MIT's dormitory system. Students in all living group types are worried that the increased capacity in the housing system and the freshmen on campus decision have turned residence selection into more of a competition for bodies, rather than a process of finding the best place for each individual, and that in fact there is now a dangerous motivation to ensure first year students do not become so complacent during their compulsory dormitory year that they do not consider other options.

Despite their distinct cultural identities, many MIT living groups are not monocultures. The subcultures within them, especially the larger dormitories, are critical to the safety and support zones that students find themselves immediately surrounded with. For example, the halls or entries within a particular dormitory may have a specific theme or identity, such as the halls of East Campus or the Language Houses at New House; in other residences, the subcultures are less defined by geography. These thematic elements often manifest themselves in shared activities such as social events and cooking groups. This type of cultural difference also manifests itself across the type of residence – within a particular class of living group, there is typically a distinction according to the generally different expectations and desires the residents have from their university experience. This seems to be both a result and a contributor to the cultural distinction between the east and west campus dormitories: students initially gravitate to the side that best represents their ideal MIT experience,



and then set about making sure that it indeed conforms to that ideal. This gravitation causes students to be suspicious of "social engineering" approaches to residential culture: since people will be attracted to situations that appeal to them personally, attempts to force them to do otherwise are unlikely to be successful. Similarly, demonstrating allegiance to one's living group is a natural outcome, and should be thought of as a supplement to demonstrating allegiance to MIT in general, rather than being in conflict with it.

MIT's living groups also have a variety of house traditions. Traditions are important to recognize at MIT; not all traditions are good, but much of MIT's rich cultural identity comes from rituals and traditions set up by its former students, and these positive legacies should be preserved and encouraged. Traditions serve to draw current residents into shared activities, and promote connections with alumni. Alumni engagement assists in mediating the effects of "institutional memory" - without it, a valuable tradition may only have to miss one class cycle to be lost forever. A relatively small amount of support and recognition may be all that is needed to entirely prevent this occurrence. Similarly, since so much of a living group's cultural structure is implemented by the house government, it is important to provide support and encouragement to the individuals who volunteer their time and energy for these positions, in order to foster an environment in which there is an expectation of participation by all residents. Since the freshmen on campus decision, this has been an emerging problem for dormitory culture: many of the people who would otherwise continue on in residence to mentor the next wave of students are instead being siphoned off to FSILGs, leading to something of a leadership vacuum, and many first year students are hesitant to fully participate – or feel like they truly belong – during their initial year, as they know they will be leaving at the end of the year. Conversely, FSILGs have lost one quarter of the time per student available for full immersion in their culture, and subsequent transfer of responsibility for perpetuating that culture. Some affiliated freshmen also complain that being forced to live on campus does little to enhance their experience, as some dormitories may not offer the level of community or underclassman-upperclassman interactions that they can attain in their FSILG.

### **The Role of Activities and Student Groups in MIT Student Culture**

Student groups are another significant part of MIT's student-owned culture. Students are wholly responsible for the success or failure of these activities, and their dedication to the former is often nothing short of astounding. Some groups might better be thought of as fully functioning small businesses; the skills students learn in staffing and operating them extend to management, budgeting and accounting, manufacturing, marketing, athletic prowess and more, as well as a host of valuable cross-cultural exposures. In addition to imparting valuable real-world experience, student groups build the confidence of their members and leaders, rather than the "learned helplessness" that frequently results from having activities organized by paid staff.

Student groups tend to be the main mechanism other than the residential system by which students develop social networks and make contact with one another. At MIT, associations tend to be formed elsewhere and carried over into class, rather than the other way round. When this is combined with their passion for the subject matter, it is easy to see why students take such pride in their activity groups and aggressively recruit new members. Students are aware that everyone at MIT has limited time resources, and the only way to survive and thrive is to attract a new generation of recruits. The result is a pleasant departure from the exclusivity and elitism that too often characterizes group "marketing" – everyone wants you to be a part of what they are doing, for their own sake as well as yours.

One reason that this method of doing things remains sustainable is that the intensity of the Institute carries over into the extra-curricular region. MIT's intensity is not just about the rigorous academics that are imposed; on the contrary, students tend to have surplus intensity within them that needs an outlet. The largest threats to MIT's student groups stem not from lack of interest, but from over-commitment. It is thus very important that MIT provide adequate support – both money and club space – and recognition for the many students that keep the myriad organizations in shape.

### **Risk and Experimentation in MIT Culture**

With choice as a principal element in the culture, not everything students choose is necessarily without risk. The innovative minds that are drawn to MIT also tend to be those types who are interested in "pushing the envelope" of what can be achieved, both in the academic setting and in their outside interests. Students can learn extensively from the unstructured exercise of concepts learned in class, as well as from each other. Some

of the remarkable feats of engineering to be found at MIT are built outside the laboratories or the classroom, in unsupervised and possibly less than ideal conditions. In such situations, students are free to make creative mistakes and learn from them without the limited feedback of evaluation or grading.

Fortunately, there is strong social pressure at MIT to make smart decisions and approach risks in an intelligent manner. It is understood within the student body that caution and forethought are the underpinnings of the responsibility and independent status that MIT students have historically been allowed to take on. Risk-taking should be, and at MIT often is, an informed choice. Projects are planned, safety "sanity checks" are made, and more experienced students act as mentors for those approaching new experiences. In this way, knowledge and skills are passed from one generation of students to the next. In addition to informal peer group monitoring, student organizations such as the Interfraternity Council (IFC) frequently have formal risk management systems in place to protect their members.

A prime example of the conscientious self-regulation within MIT culture is hacker ethics. Both senses of the term hacking – the practice of exploring and pulling technically challenging pranks – are concerned with exploring the limits of what is possible: Accessing difficult to reach places, finding spaces that have been long-since forgotten, thinking of creative ways to amuse the Institute community, figuring out how to implement a hack, and doing so in a grand and stealthy fashion, are all envelope-pushing behaviors and not without risk. These traditional activities are of great importance to the Institute's culture and image, and students recognize that in our increasingly risk-averse and litigious society they can not be sustained if performed without due diligence. Hackers follow a strict self-imposed code of ethics that are set down in writing and distributed to new students in a variety of forms. Hackers are required to leave no permanent damage, and to ensure their hacks are safe for the intended duration of the spectacle. Large hacks are accompanied by letters to the MIT Facilities staff detailing the construction of the hack and how it can be most expeditiously disassembled. Furthermore, hacks that are not removed by the authorities are typically discreetly removed by the hackers themselves after an appropriate time window. The hacking community understands that recklessness and ill-preparedness benefit no-one, so the peer code is strictly adhered to.

It is true that students, even at MIT, are not always fully aware of the nature and scope of the risks that they take. Students acknowledge that there have been instances of poor judgment among their number. What is called for is not the absence of supervision or accountability. Rather, the Institute must realize that students come to MIT to educate themselves as much as they come here to receive an education, and that this process must include the right to experiment, take risks, make mistakes, and grow from them; that they are intelligent enough to take responsibility for their own investigations, and that they should be offered support and guidance in these endeavors rather than arbitrary or blanket restrictions.

## II.2 Extracurricular and Community Resources

### **Economic Stewardship**

The economic and physical resources of the Institute are finite, and we are constantly faced with demands for more space and more money for student extracurricular and community resources. Both undergraduate and graduate students seek further input in the setting of the Institute's economic priorities for these funds – not every student or student group can have everything they request, but they should at least be able to voice input in selecting which things they can't have. Student membership should be included on resource allocation committees and broader student input should be sought for wide-reaching policy decisions.

### **Community Housing Priorities: Conflicting Messages**

The vast and diverse collection of student life programs have ambitious and sometimes conflicting goals, and currently there is little prioritization of these goals. Administrators continually preach the virtues of student community, yet the current break-even goal of housing has resulted in near-market rates for graduate housing, forcing many graduate students to live far off-campus. Housing costs continue to hamper the formation of strong graduate student community ties, and hinder graduate student recruitment. The Institute needs to develop and communicate a clear vision of how to balance the competing virtues of community and financial independence. The Institute has long had a goal of housing half of the graduate community on campus. But growth of graduate programs has far outstripped the Institute's actual building program, so the goal is far from being reached.

Many in the graduate community are greatly frustrated at the ever-increasing use of graduate beds as a means of addressing undergraduate housing needs that arise from local optimization and a lack of long-term planning in Institute decisions. The seemingly constant struggle to maintain graduate housing occurs throughout all of graduate housing, though the most intense aspect of this relates to Ashdown House. The Institute has at many times in recent decades pushed for the conversion of Ashdown into an undergraduate residence<sup>6</sup>, despite the fact that it has played a critically important role in the shaping and building the MIT graduate community over its vast history. Such actions not only devalue the communities in graduate residences, they also threaten to eliminate the few remaining universally affordable housing options for graduate students. The Institute needs to recognize the importance of graduate communities and consider the consequences of its decisions on not only its bottom line but also the effect that they have on student needs and communities.

### **Student and Community Real Estate**

Student real estate and student controlled spaces are in short supply at MIT, and allocation issues abound. Nonetheless, students are concerned that the Institute's desire for profit substantially reduces both the availability and utility of these spaces. The Stratton Student Center (W20) exemplifies these problems. Coffeehouse, a long-time late-night study and support option for students from all over campus, was closed several years back due to being unprofitable – and the Institute was not willing to step in and cover the cost of this existing support network.

Similarly, many students believe that MIT's highest priority concerning the vendor space in the Student Center is obtaining rental profit for MIT rather than providing affordable and popular services for students. For example, perennial student favorites Newbury Comics and Toscanini's were forced out of the Student Center due to high rents, and student representation on these decisions was non-existent. Conversely, when student wishes are taken into account the result has been wildly successful as in the case of Anna's Taqueria. Students therefore seek the opportunity to provide input in determining the optimal allocation of spaces and services that are nominally student-focused.

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<sup>6</sup> The conversion of Ashdown House into an undergraduate residence was pushed for by the MIT administration as early as 1955, and as recently as 1994 and 2001, with the former resulting in the housing of 45 Sigma Kappa sorority sisters in Ashdown for three years, and the latter resulting in the formation of the Senior Segue program still in effect today.

**Health and Wellness**

The wellness of both undergraduate and graduate student populations is dependent on the efficacy of MIT's medical services. There is a considerable lack of awareness of available support networks and services, and many students complain of excessive wait times. Concerned about mental health, MIT Medical sponsors a series of student-groups including MedLinks and SaveTFP, in an attempt to reduce stress and foster community. Improving student awareness of existing programs, particularly within living groups, will encourage more students to take advantage of these services.

**General Trends in Resource Management**

The student body recognizes a general trend in MIT student resource management: attempt to generate revenue, drive out or destroy existing support resources, and then try and enact more expensive, top-down support solutions. It is well understood that funding is finite, but it makes more sense, from an economic and community standpoint, to embrace and extend existing resources rather than destroy them to generate revenue. Furthermore, empowering students through direct governance or the use of student input usually yields policies that generate the student support necessary for success.

## II.3 Orientation

### Undergraduate Orientation

As new students arrive on campus in August, it is vital that they are able to integrate into and augment the existing student community. Recent undergraduate orientation trends have hindered new student integration into the MIT family. Official "ice breaking" events and mandatory lectures have replaced the previously free-form "explore the Institute" environment. As a result of reducing choice at such an early stage in their MIT experience, students complain that current Institute orientation is both patronizing and ineffective. Oftentimes, disinterested students choose to skip these seemingly over-manufactured activities, detracting from the overall spirit of Orientation. Thus, many undergraduates view Orientation to be the one aspect of student life that is most in need of improvement.

Particularly frustrating for current undergraduates has been the increased "professionalization" of planning for Orientation and the perceived dismissal in recent years of student involvement in the planning process. Given the historically active role that students have played in Orientation planning, and the cultural value of this participation, the administration must more actively and transparently engage the undergraduate student body in order to create a more valuable orientation experience for incoming students.

### Graduate Orientation

The Graduate Orientation program at MIT is particularly noteworthy in that it is planned and implemented entirely by graduate students through the Graduate Student Council (GSC). This centralized orientation program has been greatly expanded over the past five years and the effect is clearly visible in the graduate student body. Graduate students who arrived within the last few years feel much more connected to the MIT community, and report having had a more enjoyable and fulfilling first-year experience, than do those who arrived before graduate orientation was made a significant priority. In addition, the fact that the orientation is run by current grads encourages the incoming students to engage themselves in student governance and help plan future community-building events.

As the central graduate orientation has grown, the value placed on it by the Institute has not increased at the same rate. Undergraduate orientation is allotted every single available space on campus for the entire orientation period (the majority of which are not even used) while graduate orientation struggles to find space to hold its events. Such actions foster concern among many graduate students that, as an Institute, MIT places far greater value on orienting its undergraduates than it does on orienting its graduates (many of whom come from other countries). MIT must evaluate its institutional principles regarding the importance of graduate orientation and act in a manner consistent with these principles.

In addition to the central orientation program, departments and programs often have their own distinct orientation programs. Historically, the decentralized nature of MIT's graduate programs has been cause for the lack of an Institute-run central graduate orientation as each department was responsible for their own students. Given the concentration of time spent in one's own department, departmental orientation programs still remain important. While some departments perform excellent orientation programs, many of which are partially or fully run by departmental student groups, others have little or no orientation for their students, leaving students confused about the resources and expectations of their department or program. It is important that all departments recognize the value of solid and well thought-out departmental orientation programs which are well-coordinated with and woven into the Institute-wide orientation.

The Sloan School, for instance, has a very strong orientation program, but it runs during the Institute-wide graduate orientation, so that Sloan students have little opportunity to interact with the broader MIT community. Many of the relationships that students establish with their peers begin during orientation, and thus Sloan students, while appreciating the quality of their own orientation program, regret not having the opportunity to build links with the rest of campus during this time. The Institute should recognize the importance of orientation in community building among all segments of the student population, even those in traditionally separate programs areas such as Sloan.

## II.4 Personal Development

### **Graduate Mentorship in Living Groups - the GRT/RA System**

MIT's system of placing graduate students in residence with undergraduates in a pastoral care role (mentoring, emergency response and social support) seems to be somewhat unique. Many other universities employ a system of formal peer advising – hiring fellow undergraduate residents to monitor and advise their halls. MIT's system has numerous advantages, including the increased maturity, experience level and academic focus of graduate students, and the reduced stress level for the advisor compared with an undergraduate who has a more difficult task balancing the need to simultaneously act as both a peer and a supervisor.

The Graduate Resident Tutor (GRT) system in dormitories is well defined, including a Tutor Roles and Responsibilities document that attempts to clarify their sometimes confusing jobs as role models and respondents but not police. GRTs are immediately subordinate to their housemasters, which generally works well by allowing each residence team a flexible approach to dealing with issues in their houses. Occasionally, however, housemasters and GRTs come into disagreement in areas which are not specifically covered by the Roles and Responsibilities document; in these cases, due to the close hierarchical relationship between housemasters and GRTs, some GRTs feel they have few resources for arbitration.

The Resident Advisor (RA) system in FSILGs is less well defined. As there are no housemasters within FSILGs, the role of the RA is largely decided by the RA and the house residents themselves. In some instances the RA can be viewed as a "big brother or sister" to the undergraduates, and in that context a resource for them to approach when they experience problems. In other houses, the role is more formal. The RA may work with the house officers to make sure the house operates safely, or the process of house management may proceed with less involvement of the RA. Some students believe that the roles and responsibilities of FSILG RAs should be codified in a document similar to the one defining those of the GRTs, and that more resources should be available for training and support of FSILG RAs.

Students believe that one of the defining characteristics of the GRT/RA system that enables it to work so well is the trust that is carefully built up between GRTs/RAs and undergraduates by making clear that they are not placed in residence to police or inform on their charges. MIT should be careful to maintain this bond of trust by making clear that the role of the GRTs/RAs continues to be one of leading by example, not one of discipline and enforcement.

### **Peer Mentorship through Self-Governance**

MIT's living groups, varsity teams, and other student activities provide opportunities for students to develop interpersonal and leadership skills. In fact, many alumni later report that their extracurricular activities/living situation defined their MIT experiences. In order for these skills to be properly developed, students need a significant degree of autonomy in managing the affairs of their house, team or group, without being subject to excessive micromanagement from the Institute. The results are leadership, organizational, and social abilities that prepare them to be effective for the remainder of their lives.

To a large extent this is currently the case – MIT students manage groups that have budgets in excess of \$100,000 per annum, and coordinate events such as the IAP Mystery Hunt that involve hundreds of participants including people who never attended MIT, and the MIT Fall Career Fair, which interacts with hundreds of external companies and handles a budget and logistics on par with nearly any Institute event. Undergraduate dormitory and FSILG rush chairs and GSC's graduate orientation chairs run comprehensive orientation schedules that rival or surpass MIT's official undergrad orientation in terms of planning and attendee satisfaction. Student officers that manage everything from finances to social calendars, community activities, and recruitment programs, are an integral part of MIT residence halls and FSILGs. Many FSILGs also have student house managers whose duties resemble those of employed house managers at dormitories. It would be difficult if not impossible to replicate in the classroom the education gained by assuming responsibilities such as these.

However, students do feel that in some respects the MIT bureaucracy has begun to encroach upon their freedom to learn all aspects of managing their extracurricular and student group activities. For example, MIT student groups are no longer allowed to maintain outside bank accounts. While this was in response to a significant – but isolated – case of fraud, it effectively removes an important aspect of financial planning – management of funds reserves and interest income – from the experience, and thus it is possible that a less blanket response may have been appropriate. In general, students feel that the leadership and management skills that are developed through self-governance outweigh the risks associated with such "silent partner" supervision by the Institute. They therefore believe that MIT should be unequivocal about its support for student self-governance of living groups and activity organizations.

## II.5 Balance

### Undergraduate Work/Life Balance

“Work, friends, sleep: pick two.” MIT students have traditionally adopted this mantra during their undergraduate years, and for many students, these choices remain a reality for survival at the Institute. MIT students too often sacrifice sleep, exercise, social activity, and other forms of personal care in order to enhance their educational experience. The consequences of this lifestyle imbalance can be far-reaching. Sleep deprivation can endanger students’ physical health. Furthermore, stress resulting from being overworked and under-rested, combined with limited social interactions, can seriously compromise students’ mental health. When individuals focus on their work and lose perspective of those around them, they are also less likely to identify fellow members of the MIT community that may be susceptible to problems such as depression. Losing touch with non-academic facets of life can induce even more academic stress, contributing to the vicious cycle of imbalance. Finally, an imbalanced lifestyle can sometimes breed one-dimensional personalities; when too much emphasis is placed on a narrow set of academic tasks, students fail to develop life skills. MIT graduates will first need to lead balanced personal lives before they can reap the rewards of professional success.

To develop solutions that promote work/life balance, we must first consider the sources that promote imbalance. The MIT “fire hose” places substantial academic pressure on students. While rigorous academics promote technical competence and a strong work ethic, students often struggle just to keep up with the pace and the pressure. In order to complete what can be a daunting plate of assignments, students stay up late into the night and skip numerous athletic and social opportunities. While choices must be made and tradeoffs exist, students can only be “hosed” so much before the detrimental effects outweigh the benefits. But the MIT “fire hose” is not the only source of pressure. The hardworking MIT culture can, at times, border on masochism. Many students compete to outwork each other, as the difficulty of a person’s course load is often worn as a badge of honor. While a healthy dose of competition with fellow students provides a challenge and an incentive that promotes achievement, MIT’s culture promotes a peer pressure driven academic “arms race” on many. Students feel the need to constantly work harder, even at the expense of personal well-being. It can, however, be difficult to separate MIT’s culture from its people. Since the people help create the culture, one cannot ignore the fact that MIT’s students tend to be internally driven and place academic achievement at the top of their priorities.

MIT students do not believe, however, that enforced limitations on their academic choices are an appropriate solution to this lifestyle imbalance. While credit restrictions at other institutions attempt to promote lifestyle balance, MIT students enjoy having the opportunity to push themselves to their respective limits. However, some students feel that the academic environment forces them involuntarily into an imbalanced lifestyle. Professors and academic deans need to ensure that unnecessary academic pressure from unreasonable workloads or harsh testing is reduced. In addition, the Institute should help students preserve the entities that allow them to develop perspective and work/life balance. These entities include the intimate living groups that allow many students to maintain sanity and balance in their lives.

### Global Citizenship

Engineering curricula have a reputation for producing technical competence but sociopolitical ignorance. MIT’s mission is to promote the fields of science, engineering, the arts, *and* their application to the world. While MIT continues to graduate successful scientists and engineers, our competitive edge over peer institutions evaporates in areas of global citizenship. To be fair, many MIT students are politically active – recent Cambridge City Council election candidates have even included several MIT graduates. However, the MIT campus is generally viewed as politically apathetic and socially inactive. While many students do become involved in the world and the local community, these students are too often the exception rather than the rule. Politics often becomes a private hobby rather than an interest for students to share, discuss, and upon which to act.



The reasons for the general political apathy include the academic focus, lack of personal balance, and the system of peer rewards. For most MIT students, the sciences and engineering dominate their academic experience. While all students take an occasional social science or humanities course that explores global or social issues, a vast majority of their time is spent on developing competence in a single scientific area. In effect, they put on “academic blinders” and fail to gain appreciation for a variety of non-scientific disciplines. Also, when students work too hard on their problems sets or research projects, they lose the free time they could otherwise use to explore other areas – students socialize less, attend fewer guest lectures, and neglect to read newspapers, all of which compound their social ignorance and further entrench them in the MIT “bubble.” Finally, the MIT culture does not generally promote global citizenship. The system of peer rewards is firmly connected to achievement in scientific and engineering endeavors; it is generally considered less “prestigious” to work for the Peace Corps than to work for Microsoft. In addition, the social sciences are viewed as a necessary hurdle rather than as an intrinsic area for exploration and application.

The resulting lack of exposure to broader issues produces many students who are politically unaware and unprepared for global citizenship. Too often, MIT graduates dominate technical positions while graduates of other institutions gain the upper hand in positions involving people and policies. Graduates lacking a global perspective will be less likely to fulfill MIT’s goal of applying innovations to society.

### **Graduate Work/Family Balance: The Unique Needs of Student-Parents**

Student-parents are a unique and oftentimes ignored segment of the graduate population. For the approximately 7% of the graduate population that fits within this category, the great challenge is to find a way to meet and balance four fundamental obligations: research/teaching, spouse, children, and self.

Maintaining passion and dedication to each of these four elements is not easy for student-parents. This group recognizes that the time demands for each of these commitments guarantees that something always ends up being sacrificed. The financial responsibility of supporting a family on a student stipend contributes to the burden shouldered by student-parents, and the atmosphere of academia at MIT can seem unfriendly to families. Some students openly critique professors for taking time to be with their families and expound that being married, let alone with children, significantly compromises one’s academic career. When professors choose to spend the weekend in the lab rather than watching their kid’s soccer games, they send a strong message to many students: academics and families don’t mix. It is not surprising that many student-parents leave graduate school convinced never to return to academics and that many also face very high levels of stress during their time at MIT.

Many family experts argue that in some ways, graduate school is a great time to be a parent. Students have some of the greatest schedule flexibility in the working world and kids can help keep the stress of graduate school failures and successes in perspective. By augmenting programs such as the MIT Childcare Scholarship Program MIT can play a constructive role in ensuring that students-parents can both pursue their studies while living up to tremendous parental responsibilities. Indeed, childcare opportunities are scarce and often unaffordable for graduate students, preventing qualified candidates, both women as well as men with working or student wives, from even attending the Institute. Finally, graduate students could benefit from increased awareness of the under-utilized emergency discretionary funds, which offer critical short-term support for families who need it.



# Section III

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## Global Connections, the Long Term, and Strategic Planning

*“The Institute is committed to generating, disseminating, and preserving knowledge, and to working with others to bring this knowledge to bear on the world’s great challenges... We seek to develop in each member of the MIT community the ability and passion to work wisely, creatively, and effectively for the betterment of humankind.”*

*- MIT’s Mission Statement*

Students care deeply about the Institute’s long term future, our sustained viability and the enduring pursuit of our founder’s inspirational MIT Mission. Specifically, we are concerned by and seek to address the following domains:

1. **Bold Institute Actions** – At key junctures in our past, Institute faculty and leadership have pursued transformative grand pursuits, inventions and acts which improve the world and make us proud of our MIT connections. The grand aspirations of today and tomorrow are tremendously important in that they will inspire future generations of students. Too often, however, the Institute’s great story has remained practically hidden, as if we’re too busy creating the future to celebrate our past successes or strategize about emerging directions. We urge MIT faculty and administrators at all levels to be more visible leaders, that is, to rally us and the world at large, to voice our core values, and to craft unifying Institute goals and directions.
2. **Expansion and Growth** – For most of our history, the Institute has been in growth mode, expanding to accommodate emerging disciplines and future frontiers. And yet we face severe physical space and financial limitations on similar policies into the future. To properly fuel the MIT Innovation Pipeline, the Institute needs ever more creative mechanisms and moneys for engaging faculty and students in the creation and re-invention of disciplines and novel research areas. By exploring novel institutional structures, international engagements, and new kinds of interdisciplinary programs, MIT can maximize the odds of staying vital.
3. **Connecting Strategy and Operations** – When everyday administrator action is at odds with overarching Institute strategy, confusion reigns in the student ranks. Local optimization in Institute decision-making is a root cause of a great deal of student frustration. Students desire transparency, accountability, and competence. We ought to strive for a well thought through and integrative total student experience, one that weaves together all the myriad elements of our time at MIT and beyond.
4. **Institute Economics** – The Institute’s cost-structure, tuition duties, deployment of endowment income, and capacity to deal with sponsor volatility all directly affect student life. MIT students are especially sensitive to perceived misallocations of money and too often believe that some part of MIT is wasting it. Perhaps this is in ignorance of the “full picture”. Perhaps, however, it is a correct student perception. True transparency and accountability would allow us all to discern the difference.
5. **Positioning Locally and Globally** – As global inter-connectedness becomes the new world order, the Institute must seize the opportunity, seek out tomorrow’s talent and moneys, embody viable economic practices, and position ourselves for enduring success.



## III.1 Bold Institute Actions

### Grand Pursuits

The Institute has a rich legacy of Grand Pursuits, endeavors which not only benefit our direct constituencies today but reach out like a beacon of innovation to influence the world for the better and accomplish our larger mission. Current examples include MIT's hosting the W3C Web Consortium, the unifying standard-bearer for global internet and information connectivity, and MIT's commitment to OpenCourseWare, sharing our curriculum freely such that individuals and institutions worldwide can learn. In earlier years, MIT leadership and faculty co-founded such influential efforts as WGBH, the basis for public and educational broadcasting in the United States, and Project Athena, a revolutionary campus-wide computing and communication system that helped define a new paradigm in the world of computing. Sputnik-era MIT efforts to advance children's science and math education were ultimately spun-out to form Educational Development Corporation, currently an independent, six hundred person, non-profit K-12 educational materials and support organization.

What then are the Grand Pursuits and bold experiments of the next MIT generation? Might we take scientific publication back to its open, non-profit roots and spearhead a worldwide online OpenSource Knowledge Initiative? Could K-12 education benefit from a parallel OpenCourseWare revolution in OpenKidsWare or even a School of Education at MIT? Might the Institute embark on a Global Development Initiative in pursuit of economic viability and environmental sustainability, bringing the fruits of innovation and entrepreneurship to the three-quarters of humanity beyond first-world borders? Such endeavors would be sources of moral inspiration to students, something we could take tremendous pride in being part of and helping bring to reality. MIT must be vigilant and attentive in the search for other projects that might innovate in such inspiring ways on a grand scale.

### Inspirational Leadership

MIT's commitment to advancing knowledge and education in order to serve the nation and world at large has forged a plethora of inspiring leaders ranging from entrepreneurial leaders like Alfred P. Sloan to Nobel Prize winners such as H. Robert Horvitz. In all of the departments and fields of study within MIT, one finds talent and leadership that motivate students and members of the MIT community, as well as many others around the world.

To meet and maintain this expectation, MIT needs strong, rousing leaders on all levels: administration, faculty, student, and alumni. We need leaders who can be ambassadors of this Institute; leaders who really go out and shape the world, as well as leaders who can continually inspire and hone one another. It might be useful to incorporate this quality into the selection criteria for hiring faculty and administrators and even in the admission of students. In addition, MIT can promote inspirational leadership by highlighting its existing leaders. For instance, one way this can be done is by giving Deans more public visibility and a role in strategic outreach. Ultimately, by producing strong leaders, MIT can attract strong leaders (and vice versa).

Finally, MIT faculty and senior administrators seem reluctant to actually lead; that is, to take more time to be visible in public, to voice inspiring words, to rally students and other Institute community members towards bold goals and lofty aspirations, and to share an aggregate institutional vision. By "vision" what people really seek is a coherent description, a compelling story which synthesizes the most exciting and emergent themes at MIT, as articulated by those senior leaders who really do have Institute-wide perspective. Far from being "cornball", such exhortations can indeed move people to action and raise our aspirations. President Killian's Inauguration phrase became a signature of his era, evoking MIT as a "university polarized around science, engineering and the arts" which while limited in objectives is unlimited in the intensity and degree to which those goals are pursued. As an Institute, we can learn lessons from our earlier Presidents – Rogers, Walker, Maclaurin, and Compton for instance – who were compelling orators and writers and who were disproportionately more visible in their day and influential both on campus and in the eye of the general public.

## III.2 Expansion and Growth

### Emerging Research Fields

MIT has committed significant resources to expanding and developing new and emerging areas of research over the last two decades, most visibly in materials and “tiny” technologies, biological engineering, the mind sciences, information technologies, in social- and global-systems innovation, and more. The emergence of these fields has both inspired and driven new collaborative enterprises within and beyond MIT’s institutional boundaries, requiring greater sponsor volume, placing increased stress on common infrastructure, demanding building renewal and construction, and squeezing older, more classic fields. Furthermore, most students are unaware of the broad spectrum of emerging fields and their transformative implications. While MIT has core classes in the classic foundation disciplines, there is no longer any survey class for all MIT students which considers the emerging issues and opportunities of the day and places current work into larger societal context.<sup>7</sup>

### The MIT Innovation Pipeline

MIT’s Mens et Manus mission demands a balanced approach to the disciplines combining both theory and practice, and embracing the full spectrum of technological endeavor, ranging from exploratory fundamental science through application to commerce and real-world impact. A few students have benefited tremendously from exposure to all phases of the Innovation Pipeline at MIT, from work as UROP or RA on sponsored research, through class participation on a Deshpande Center Innovation Team, through extracurricular company-founding via the MIT \$50K Entrepreneurship Competition and advising from alums in the Venture Mentoring Service. And yet the totality of these ‘pipeline’ experiences are neither scaled-up enough to be available to most students nor are most students properly aware of the overall innovation ecosystem at and around the Institute.

### New Schools & Program Renewal

President Compton created the Schools structure at MIT in the 1930s as a mechanism to both provide depth of administrative leadership, and to place the Sciences on a par with Engineering while recognizing the distinct strengths of the Arts disciplines of Architecture & Planning. After WWII, during President Killian’s tenure, Humanities and Management were formalized, leading to the Five Schools structure in place today.

While appreciating the strengths of the current Schools and Departments, many students wonder why MIT has not embraced additional Schools, especially the areas of Law, Medicine, Policy, and Education. MIT does have a variety of programs in all of these domains – for instance, Health Science & Technology (HST) is a collaboration between Harvard Medical and several Engineering disciplines at MIT. Furthermore, MIT has several offerings for students interested in pre-law or pre-medical or civil service or K-12 teaching. And yet none of these programs is a bold commitment on the Institute’s part to building deep-strength in these areas, especially in a uniquely MIT-style. In fact, recent Presidents have seemed to shy away from further School-building<sup>8</sup>. For instance, which institution would be better positioned than MIT to specialize in legal implications of new technologies, of intellectual property and intangibles, of environmental risks and externalities, and so forth. Such an MIT-style Law School would tackle some of the most challenging issues of our age. Similarly, it is widely accepted that improving K-12 education is crucial, but through what formal mechanism is MIT actually demonstrating a real commitment to creating educational solutions?

In MIT’s matrix structure, the Departments and disciplines change rarely – perhaps one or two recombinations or new entities per decade – whereas Groups, Labs, Centers, and other research vehicles come and go ten times

<sup>7</sup> According to his biography, MIT President Walker ran just such a class for all students during his tenure. Perhaps the time constraints and responsibilities of today preclude Presidential action, but Walker’s Institute-Wide Elective served an enduring need and, alas, has no parallel in the modern curriculum.

<sup>8</sup> For instance MIT President Weisner not only turned down a proposal to create an MIT Medical School – fearing overwhelming financial burden and instead creating the joint-HST program – but also turned down Professor Rines’ proposal to create a Law School. Undaunted, Rines went on to found and build the Franklin Pierce Law Center, for many years now a top-ranked technology law institution in the US -- [http://www.aas-world.org/intellectual\\_property/fplc/fplawcenter.html](http://www.aas-world.org/intellectual_property/fplc/fplawcenter.html) How much stronger might this program have been today had this effort begun in the 1970s under the MIT umbrella instead of independently? Is a merger possible?

as frequently. Perhaps, then, the School structure is itself becoming antiquated with the classic distinctions between science and engineering blurring and the differences between pure and applied social science slipping. Are new cross-disciplinary Divisions such as Biological Engineering or Engineering Systems indicators of things to come? Will we see further growth of virtual Divisions such as the Computational & Systems Biology Initiative (CSBi)? Perhaps these less heavyweight structures are, in fact, excellent mechanisms to explore emerging areas while avoiding formal, structural and hard-to-change Institutional commitments.

### **International Programs**

MIT currently coordinates programs of international intellectual exchange such as MISTI and the Knight Fellows, programs which help convey MIT ideals and culture to a multi-national audience. MISTI exports MIT's training through individual students sent as interns to labs and offices in Europe and Asia. The Knight Fellows Program immerses science journalists, active world citizens by birth and by occupation, within MIT's unique social and academic context. Both programs are successful integrations of perspective between MIT and the international community and merit ongoing nurturing, if not scaling-up and increased support.

Despite globalization and increased international interaction, global breadth and sophistication appears systemically undervalued in the general MIT education both for undergraduate and graduate students. The formal curriculum allows relatively few opportunities for study abroad or student-generated short term international research projects. The Institute stands to benefit as a whole by instilling opportunities for global awareness and social responsibility within its curriculum, which assist with the global positioning goals discussed later in this report.

### **Interdisciplinary Initiatives**

MIT might gain enduring competitive advantage by tackling key 21<sup>st</sup> century challenges that demand rigorous system-level interdisciplinary approaches, such as global sustainability, life science solutions, offshore outsourcing, global access to pharmaceuticals, and economic development. MIT has demonstrated a keen ability to promote focused horizontal integration through research efforts such as the Media Lab, the Earth Systems Initiative, -and Deshpande Center innovation programs, and the Broad Institute. Furthermore, the Institute has encouraged cross-disciplinary programs run by students on an extracurricular basis, for example the MIT \$50K Entrepreneurship Competition. Despite these successes, there still remains a strong sense among students that integration of our five Schools has not reached full potential. Perhaps a focused approach that defines new multi-disciplinary centers of excellence will place the Institute in a position to build on our key strengths in engineering, physical sciences, life sciences, management, arts and humanities.

### **Physical Campus Planning**

MIT's physical campus is a fundamental driver in the experience of all MIT stakeholders and ultimately the success of the Institute. It is a physical manifestation of MIT's commitment to pursuing innovation and building global leaders. Not only does a well-planned campus provide the space and resources for cutting-edge research and comfortable student housing, but it also greatly impacts the perceptions and experience of our key external stakeholders, ranging from recruiters to prospective students and faculty to industrial and academic partners.

MIT has undergone significant expansion and reorganization of its academic and research facilities in the past few years. While recent projects such as the Z-Center, new graduate housing, the Stata Center, and the McGovern Institute are viewed as substantial improvements, many students feel that the current facilities remain insufficient for optimizing the innovative environment and quality of life goals for MIT. In short, the campus is unnecessarily ugly, under-capitalized, and inadequate. Students at the Sloan School, for example, feel constrained in their workspace and ability to provide a professional, comfortable environment for recruiters and visiting colleagues. The Mass Ave. entrance to MIT is not very "inviting", large portions of older facilities are sorely in need of renovation, and the campus as a whole still lacks flexible, welcoming spaces outside of the lab. MIT might also consider opportunities for other satellite campuses such as the Wood's Hole Institute.

There remains a constant tension is between investing in functional lab space and alluring community space. MIT needs to rigorously assess how and whether the recent investments, for instance in the Stata Center, have impacted our research productivity, faculty satisfaction, student quality of life and stakeholder perceptions of

MIT. Above all, the students feel that a more robust physical campus planning board and process with formal, integrated student involvement would be a most useful initiative in helping to answer these questions.



## III.3 Connecting Strategy and Operations

### **Local Optimization**

Perhaps the most frustrating thing from a student's perspective on the Administration is when one part of the Institute takes a decision whose consequences – direct and indirect, short term or long – are detrimental to the operations and effectiveness of another part of the Institute. Too often locally optimal decisions which have “unintended consequences” elsewhere should probably have been better thought through in the first place. Examples abound and range from the size of Master's programs relative to physical and faculty capacity in certain Schools, through extraordinary and repeated cost overruns in numerous building programs, to short-sighted decisions about food service requirements, campus beautification efforts (or lack thereof), departmental spending growth, operational over-commitments, and many more.

### **Strategic Planning & Operational Synthesis**

Pervasive local optimization leads students to wonder who in the MIT administration is charged with overall Strategic Planning and ensuring that overarching strategies are actually practiced in and connected to day-to-day operations? Students wonder whether it's wise that MIT no longer has a unified Planning Office, for instance. Who today is responsible for stepping back, considering the grand sweep of causal implications of various local and often urgent decisions, and advocating for the synthesis of short, medium, and long-term benefits, not just in one departmental or operational silo, but for the Institute as a whole?

### **Crafting the Total Student Experience**

Similarly, students wonder which senior administrator formally takes responsibility for, and has the depth of interest and capabilities to actually optimize our Total Student Experience. The Total Student Experience – ranging from before matriculation through orientation, first-year, growth years, final semester, commencement, and beyond – is fundamental to the Institute's mission of educating and inspiring the next generation of innovators. It is clearly understood that many administrators are responsible for isolated elements of students' experience at MIT. We struggle, however, to see who, in practice, weaves it all together.

## III.4 Institute Economics

### **Tuition & Transparency**

Not only are tuition costs continuing to out-pace inflation, but an increasing number of extra fees are being levied (e.g. Student Life Fee, course materials and space rentals). Students applaud the Institute's Need-Blind admissions policy, but worry that the high-price / high-aid system disproportionately pinches families in the middle while not sufficiently developing those who are more financially able. We further wonder if top applicants will continue to see an MIT degree as really worth the growing tuition cost, especially when their alternatives include premier state schools who subsidize them heavily. Furthermore, many students do not understand why their tuition is so high when they see cost overruns and dubious expenditures all around the Institute. MIT should provide greater transparency to bolster students' confidence that money is well-spent at the Institute. For graduate students, many specific concerns dominate. For instance, MIT is the only university which requires full tuition for graduate students when they are not taking classes and are ABD status. While students fully appreciate the high costs associated with running a research university, there is concern that MIT's tuition and aid policies may worsen our competitive position both versus state-subsidized schools and our private peers worldwide.

### **Financial Overhead & Transparency**

Overhead costs at MIT are too often used as an explanation for why student proposals are not feasible. The large-scale bureaucracy of MIT provides many services, but MIT seemingly only reduces the size of ineffective or inefficient organizations during times of extreme financial hardship. MIT's volatile endowment and funding sources have caused a cycle of boom-bust spending that has left groups with half-completed construction projects, and existing facilities under-maintained due to resulting budget cuts. Greater transparency in the overhead costs at MIT would help students understand the financial realities of MIT and help MIT understand where cost savings can be made in a more regular manner.

### **Inconsistent Scaling of Student Populations**

Over the last few decades, faculty and undergraduate numbers have stayed constant but graduate student, post-doc and staff numbers have climbed substantially. MIT does not have a centralized strategy for the growth of the graduate student population, and the needs that graduate students have for appropriate faculty and undergraduate support. If MIT does not have the economic strength to support growing the entire population proportionately, a centralized strategy needs to be developed to limit the growth of graduate student populations to the point where the research experience is diluted.

## III.5 Positioning Locally and Globally

### Political Influence

As a leader in science and technology, MIT has a responsibility to invest time and energy in local, state, national and global representation of science and higher education interests. However, the time invested by the President and other officials at MIT must be balanced with the need to maintain MIT's reputation for world-class innovation by focusing on improving MIT internally as well. MIT Presidents have served in senior positions in the federal government, and have been responsible for major scientific efforts our nation has undertaken in periods such as World War II. MIT has also taken a bold stance on higher education issues such as affirmative action, and must continue to lead our peer institutions in this manner. Along with national influence, local influence in the city of Cambridge is important as well. Cambridge has shown itself willing to use its power to play a strong role on campus in terms of regulation. MIT should continue to leverage the many contributions that it has made to the city of Cambridge in building a stronger relationship. Perhaps one underutilized tool in fulfilling this goal is the student body – students are undoubtedly willing to take opportunities to get involved in all levels of government, and MIT's government relations office should incorporate student involvement into their strategy for political influence.

### Competing Institutes

The European Union recently announced plans to create “institutes of technology” in the MIT mold. Such announcements, though some may view them as threatening, nevertheless illustrate MIT's international recognition; our pivotal role in guiding and shaping the world of science and technology is admired worldwide. In a globalizing world, it is critical for MIT to constantly reinvent itself and maintain a valuable place through all our fields of science, technology, engineering, education, and research.

The Institute has long been an elite university where science and engineering education is world-class. However, as the top universities compete more and more fiercely for the best students and faculty, MIT has found itself in a world of competitors. For example, a university that has only a few “superstar” professors can likely offer higher salaries<sup>9</sup>. The Institute also competes with universities with larger endowments and on the basis of how much technological commercialization it can create.

An example of this competition on the admissions side is MIT's relationship with other technical schools such as CalTech and its relationship with Ivy League institutions. In the former case, MIT competes with these schools directly in the science and engineering areas where MIT is strongest. In the past, MIT has won a large percentage of applicants who were admitted to both MIT and CalTech or another technical school. However, against the Ivy Leagues, it is more a question of attracting well-rounded students who are also interested in a rigorous science and engineering education.

A second example of this competition can be seen in the recent decision by another institution in Cambridge to develop a school of engineering. MIT competes with this other university in several academic areas, but engineering will be a relatively new one. As more and more emphasis is placed on innovation and practical education, it is not surprising that engineering disciplines are more and more attractive to all universities.

In the realm of competition, MIT has clearly succeeded before as we are still rated number one in many engineering disciplines. However, MIT must continue to provide its students with the best opportunities and experiences in order to stay on top. Perhaps, one good example of this is making sure that graduate students receive competitive funding. There are of course many areas for improvement, as they would be at any institution. As long as we keep sight of the fact that MIT is, and should be, one of the premier, science and engineering education and research universities in the world, we can continue to successfully compete.

<sup>9</sup> <http://web.mit.edu/giving/why/why/growingcosts/talent.html>

**Public Face**

The public face of MIT – i.e. our brand and reputation and tangible acts, as well as our visible institutional leadership – both serve a rallying community integration function as well as communicate what prospective members of the community should expect from MIT and our people. The MIT brand embodies our mission, values and community priorities while developing outsiders’ expectations of how they will value the MIT experience, reputation and relationships. To this end, every major program and initiative should be evaluated against its ability to both defend and strengthen MIT’s public face; admissions, sponsorships, recruiting and faculty retention depend on this.

A good example of MIT’s sensitivity to its public face is the OpenCourseWare (OCW) program. This program clearly helps strengthen MIT’s position as a global educator and distributor of knowledge. Two areas of weakness, however, are in the outside perception of MIT’s people as somewhat unbalanced and poor recognition of the warmth of the MIT community as a whole. From a student perspective, this can be a substantial negative force in attracting the best new students as well as top-quality employers. Sloan students experience this disappointing perception regularly, often having to defend themselves to recruiters against the “techie” and “Sloan students are focused on IT and operations” stereotypes.

The challenge for the Institute is to proactively shape public perception that reinforces our strengths in technology and innovation while providing a more balanced view of the global MIT leaders that are developed here. Highlighting our Nobel Laureates and amazing technical achievements is imperative, but we suspect Kofi Annan, Amar Bose, Benjamin Netanyahu, Robin Chase, Bob Metcalfe, “Buzz” Aldrin, and John Reed would probably agree that there is more to MIT people than just technology. Shaping public perception along the desired dimensions must have a proactive, systematic, and continuous strategy behind it, one supported by MIT students, faculty, administration and alumni. Perhaps a valuable interdisciplinary leadership opportunity would be for students in all five Schools to convene a joint task force focused on evaluating MIT’s current public face and developing a comprehensive plan for filling the gaps. Although the Sloan School still struggles to decide between promoting its technology connections to MIT or its skill in training general managers, the branding program at Sloan might serve as a model for what is needed for the Institute as a whole.

**Global Citizenship**

MIT students are both drawn from a worldwide candidate pool and upon graduation disperse globally. Unfortunately, the importance of current events, cultural appreciation, and indeed global citizenship is often squeezed out or even forgotten by many students while here. The stereotypical MIT student is unfortunately all depth, no breadth. However, the world needs MIT to graduate students who combine tremendous skills in depth with worldly sophistication and breadth.

Although the Institute has already taken initiatives such as the Singapore-MIT Alliance (SMA) and the MIT Sloan Fellows Program in Innovation and Global Leadership to strengthen its global position, it still remains difficult for students to sustain a global perspective. Being physically and geographically removed from the rest of the world while balancing rigorous academics inevitably restrains student perspective.

The Institute must explore creative means of fostering global awareness and social responsibility. For example, strengthening collaborations like the SMA, incorporating study-abroad opportunities in the Institute curriculum, and exploring new international research opportunities (IROP?). Less formally, organized forums or lecture series orient and expose students to global issues. For instance, a recent colloquium on the Politics of Reconstructing Iraq explored an important topic not only of professional relevance (e.g. to the architect, urban planner, civil engineer, and ROTC student) but of tremendous political and social responsibility.

**Systematic Global Outreach**

Most of a student’s time at MIT is necessarily local, in the lab or in the classroom. As a result, people graduate without having attended international symposia, visited foreign institutions, experienced truly different cultures, and engaged with larger professional and alumni networks. The Institute should encourage and facilitate student travel to conferences, build upon exchange programs, such as CME and MISTI, as well as elective field classes, such as D-Lab and G-Lab, and generally consider embracing global experiences as a formal part of the curriculum for all students.