Massachusetts Institute of Technology

Guiding Strategies for MIT's International Activities

A Report by the MIT International Advisory Committee

FINAL

September 3, 2009

EXECUTIVE SUMMARY

The International Advisory Committee (IAC) proposes the following four primary aims concerning international engagement in support of MIT's core mission:

Education: Provide MIT students and faculty with high quality opportunities to learn about and engage with the world.

Research: Provide MIT students and faculty with unique and enhanced research opportunities world-wide.

Service: Undertake international service activities that build on MIT's strengths and leadership, while providing new research and educational opportunities for our own faculty, students and staff.

Campus Community: Maximize the quality of our educational, research and service programs by attracting to MIT the best faculty and students from around the world.

The IAC's proposed guidelines for MIT's international strategies include the following:

- MIT should develop targeted, long-term engagements in multiple regions of the world, based primarily on their fit with MIT's core research and educational objectives and on the capacity of these engagements for sustained success at the frontier of innovation.

- MIT should leverage its record of achievement in leading-edge scientific and technological research in developing international engagements that best serve the nation and the world and enhance MIT's position as a premier academic institution.

- Our international activities should reflect MIT's unique strength in integrating education and service with research, working collaboratively across disciplinary boundaries, and effectively and creatively applying knowledge to practice.

- MIT should expand the number of opportunities for MIT students to gain high quality international experiences without academic or financial obstacles.

- International initiatives should be based on strong faculty participation and leadership, and be established through an iterative process involving faculty and administration, with student input where appropriate.

- MIT should expand its global engagement of alumni and friends, with an initial emphasis on those geographic areas where significant institutional research or educational activities are in place or being developed.

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I. <u>Background</u>

The increase in connections among different nations and societies that the world has witnessed in recent years, fostered in part by rapid advancements in communication technologies during the late 20th century and by the natural dispersion of economic growth across the globe, has had a profound impact on social, economic and intellectual exchange. Both industrial and developing nations share a growing sense of common global challenges that can be met only through mutual effort and cooperation. As institutions dedicated to knowledge advancement and service to society, universities are perhaps uniquely positioned to help shape the ways in which these international connections will continue to develop.

MIT has a substantial history of international activities related to research and education, and the expanding global connections of the 21st century are providing the Institute, as well as other major research universities, with increasing opportunities to engage in projects and collaborations outside of the U.S. These opportunities are reflected in part by growing demands in two directions: our faculty and students have research and educational interests that often naturally lead to international activities and experiences, especially as communication across national boundaries expands, and research and teaching interests overseas increasingly advance to intellectual frontiers and complement our own interests; and MIT is widely viewed as a high-value partner by foreign governments, corporations and universities that increasingly seek to initiate collaborations and share resources with the Institute.

The vital importance of international engagements to MIT's health as a premier institution has long been recognized. In 1991, an MIT faculty study group – the "Skolnikoff Committee" – issued a report entitled "The International Relationships of MIT in a Technologically Competitive World"[1], which held that MIT's primary obligation to serve national interests is best met by maintaining the Institute's status as a premier institution focused on science and technology, and that engaging internationally in these areas is absolutely essential to MIT's success. The report expressed the conviction that faculty interests must guide the Institute's overseas engagements, and it emphasized that research activities and ideas must be openly communicated across national borders in order to achieve maximum intellectual and practical benefit. Though many of the observations and recommendations contained in that report are still relevant today, the world is now very different from 1991 (when the Internet was still in its developmental stages, for example) and the forces that influence international activities are more complex. While the Skolnikoff Committee saw open international engagement as indispensable to MIT's institutional strength, today we have an even greater appreciation for the importance of working with *global partners* on areas of common interest.

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[1] http://web.mit.edu/faculty/reports/1991%20Skolnikoff%20Report.pdf

In 2005, the MIT Faculty Policy Committee issued a set of recommendations for assessing international commitments, designed to help formalize many of the practices and guidelines already being followed in these areas and to make these guidelines more transparent to the MIT community. In spring 2006, a series of ten seminars on various MIT international activities was presented to Academic Council, in order to provide our senior leadership with a clear and shared focus on some of the institutional issues that arise from these activities. More recently, faculty working groups have been formed for the purpose of examining the possible expansion of collaborations within specific countries and regions, notably India, China, and the Middle East; the "Global MIT" web site was created in order to catalogue the various international activities that are proceeding across the Institute; and a faculty task force, the MIT Global Council, was created in order to examine and assess the Institute's existing efforts in international education, and to develop a long-range plan for a globally-active undergraduate educational program and for a distinctive global educational and research initiative.

A number of general observations about MIT's international engagements and their importance to the future health of the Institute have emerged from these and other recent discussions:

- MIT's core teaching and research activities will benefit from sustained engagement with international talent in these areas. Several of the most challenging contemporary problems facing researchers and educators transcend national boundaries, and many of the best solutions to these problems are being developed overseas. MIT will encounter increasing opportunities for constructive, global engagement in a range of research and educational areas.

- Our students need to be well prepared to live and work in a world that is becoming more internationally connected. We have an obligation to enable MIT graduates to gain positions of leadership that will help to shape the global society. To this end, there is a strong consensus that MIT needs to expand the opportunities for its students to have the types of international educational experiences that will achieve this vision of leadership. Recommendations at the undergraduate level are reflected in the recent reports of the Task Force on Undergraduate Educational Commons and the Committee on Global Educational Opportunities for MIT Undergraduate Education (GEOMIT)[2].

- It is well understood that competition among peer universities will take place increasingly within a global framework. Effective management of MIT's international visibility will require a coherent institutional strategy designed to guide our international activities. At present, MIT's institutional presence

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[2] http://web.mit.edu/due/global/GEOMITREPORT.pdf

overseas is perceived, both internally and perhaps also outside the Institute, as less well defined than it should be.

- At the same time, the breadth of MIT's major international activities is expanding, with collaborative agreements being established in a range of countries including Singapore, Portugal, Abu Dhabi, and Saudi Arabia. The highly successful MIT International Science and Technology Initiative (MISTI) is expanding the locations of its international internships.

- In the absence of a better defined international strategy, MIT has at times been reactive in its choice of international engagements, responding to opportunities originated by foreign institutions without adequate guidelines for assessing the relative merits of different projects. This has been a suboptimal approach to differentiating among such opportunities. MIT will not be able to pursue unlimited activities, so it must be prepared to set priorities based on institutional goals that embrace a more proactive strategy.

II. <u>Formation of the International Advisory Committee</u> http://global.mit.edu/iac.html

In the context of these and related observations, in spring 2007 Provost Rafael Reif appointed an International Advisory Committee (IAC) composed of senior faculty from the five Schools and members of the senior administration. (A full list of committee members is provided in **Appendix 1**.) The committee was asked to develop recommendations for strategic courses of action to guide MIT's international engagements in the coming decades. Specifically, the IAC was charged to:

1. Contribute to the design of an international strategy for the Institute through direct consultation with the Faculty and the Administration.

2. Advise the Senior Administration on the value and appropriateness of proposals for international institutional initiatives and partnerships.

3. Report regularly to the President, Provost and FPC and, from time to time, to the MIT Faculty at large on the IAC's progress in the design of an international strategy for MIT.

The IAC met with a number of faculty members and other MIT affiliates who described their recent experiences with international research, educational, or service activities, in order to help the committee understand the institutional impact of such activities and consider some of the challenges involved with their operations. A list of those individuals and topics discussed is provided in **Appendix 2**.

III. <u>Overall goals in the context of MIT's mission</u>

The Committee began its discussions with a review of the MIT mission statement:

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.

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. MIT is dedicated to providing its students with an education that combines rigorous academic study and the excitement of discovery with the support and intellectual stimulation of a diverse campus community. 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.

Toward the fulfillment of this mission, and building on the general observations about the Institute's international engagements already mentioned, the IAC proposes the following four primary goals of MIT's international strategies:

Education

Provide MIT students and faculty with high quality opportunities to learn about and engage with the world.

Research

Provide MIT students and faculty with unique and enhanced research opportunities world-wide.

Service

Undertake international service activities that build on MIT's strengths and leadership, while providing new research and educational opportunities for our own faculty, students and staff.

Campus Community

Maximize the quality of our educational, research and service programs by attracting to MIT the best faculty and students from around the world.

As expressed by the 1991 Skolnikoff Committee, we believe that MIT's primary mission is to serve the best interests of our nation, and that maintaining productive international engagements is absolutely essential to achieving this mission. In addition to strengthening MIT's advancements in research and education, our international engagements should also strive

to serve the world at large through creative innovation. Ideally, these engagements should produce benefits to MIT, to our nation, and to our overseas partners.

IV. <u>General guidelines</u>

Before discussing each of these primary goals in more detail, we believe that there are several fundamental guidelines that cut across all of these goals, and MIT's strategy for meeting these objectives can best be developed in the context of these guidelines.

1. "Bottom-up" and "top-down" strategies need mutual support.

The wide range of international engagements, in terms of both content of activity and geographical location, that are potentially available to the Institute makes it tempting to suggest that the MIT administration ought to help assess the options by establishing a unified institutional strategy, or set of strategies, that focuses on particular areas of research and/or specific regions of the world. In addition, many foreign institutions are accustomed to establishing strategies in a "top-down" manner and assume that partnerships with MIT can be formed in the same way. However, the IAC believes, as did the Skolnikoff Committee, that the best ideas for advancing MIT's research and educational objectives have been, and will continue to be, generated by our faculty and students. The Institute encourages its faculty to freely pursue those research efforts that they perceive to hold the most promise for intellectual advancement, and we believe that this principle should apply just as strongly to international engagements as to domestic activities. At the same time, we recognize that the MIT administration is in a strong position to initiate ideas for global engagement by virtue of its comprehensive view of institutional priorities and its extensive international contacts.

We therefore suggest that the formation of strategic priorities in the international arena should be an iterative process, whereby the MIT administration maintains an open, ongoing dialogue with the faculty regarding areas of international interest, watches for the formation of a critical mass of new ideas around a certain area of content or global region, and acts to facilitate the development of related efforts into a larger strategy as appropriate. The administration can play an important coordinating role to leverage the connections among different projects across the Institute that may focus on related fields of research or may involve the same areas of the world. MIT's senior leadership is also in a position to marshal resource development efforts toward major activities developed by the faculty that are broadly constituted and hold promise for lasting international partnerships. In short, faculty-initiated projects need the support of the administration in order to achieve success on a large scale, and the administration itself often provides the impetus for new activities.

A prime example of this sort of "reciprocal" relationship between the faculty and administration is the MIT Energy Initiative (MITEI http://web.mit.edu/mitei/index.html). Faculty, staff, and students working in a variety of disciplines at the Institute saw the compelling need for academic researchers to address the energy crisis, and communicated this sense of priority in discussions with the President and others in the central administration. The President recognized that the work being done on the related areas of energy and climate change by faculty in different areas of the Institute could be brought together under a unified strategy, and provided central resources to facilitate the coordination of these efforts. The senior administration was also able to help develop a broad range of partnerships with leading international universities and companies having strong interests in these areas, in ways that individual faculty or research groups would not have been able to accomplish so easily or effectively on their own. As a result of these supportive efforts, MITEI has become one of MIT's signature global initiatives, reflecting the Institute's talent and ambition for bringing cross-disciplinary research to bear on issues of international importance.

Similarly, the highly successful OpenCourseWare (OCW) initiative (http://ocw.mit.edu/OcwWeb/web/home/home/index.htm), which provides free web-based access to essentially all MIT course materials, has depended heavily on the initiative of the central MIT administration in providing resources for its development and in encouraging the more than 90% of MIT faculty who participate in the project. Perhaps more than any other single initiative, OCW gives MIT the ability to extend the profile of its educational program to a virtually unlimited global audience.

2. Our international engagements should integrate education, research and service wherever possible, maintaining MIT's traditional *mens et manus* focus.

MIT's core philosophy emphasizes the fundamental connections among education, research and service, recognizing them as inseparable elements of our academic mission that shape our distinctive institutional culture. We believe that MIT's most successful international activities will reflect this culture and seek to include these three elements to the greatest practical extent wherever the Institute has overseas efforts. This approach should also maintain MIT's tradition of developing and applying knowledge in the context of practice as a way of engaging with the world.

3. Working with global partners will enhance MIT's global impact.

Partnerships in which there is a true sharing of educational efforts or research investigation are preferable to one-sided projects where MIT researchers proceed without commensurate involvement of foreign peers. Active international collaboration is important to advancing knowledge and to promoting cross cultural and political understanding. The Institute will maintain excellence in research only by developing greater connections with path breaking work being done abroad, where some of the most interesting problems and best answers are

located. MIT should strive to work with international partners that have faculty, staff or students of comparable quality to those here. We stand to learn most from partners who are at the global forefront of innovative research or educational methods that effectively complement our own.

4. Long-term partnerships should not constrain MIT's flexibility.

MIT should proceed very carefully with long-term commitment of resources (financial and human) overseas because of potentially changing global circumstances. Especially in the scientific and technological world, faculty interests that lead to research priorities can change, sometimes rapidly, and MIT must remain nimble in its ability to re-deploy resources when and where necessary. The ability to do this becomes more difficult when operating internationally. We recommend that, following a planning period, initial commitments with international partners have reasonable limits placed on their durations, and include adequate flexibility to periodically review and assess the value of continuing the partnership or collaboration.

5. The granting of MIT degrees should not be outsourced.

In the context of educational partnerships in particular, the IAC believes that the granting of MIT degrees should remain located exclusively at MIT and should not be extended to foreign locations, for reasons related to the quality control of the degree granting process. To the extent that partnerships developed with foreign universities entail jointly-developed educational programs, MIT may have reason to consider arrangements in which certificates of educational achievement are awarded, which would recognize MIT's involvement with the program but not rise to the level of a formal degree.

6. Faculty effort on campus should be preserved.

Growing involvement with international activities will likely lead to an increase in the amount of time some of the faculty spend off campus. Given current Institute policy to keep the size of the faculty at present levels, it will be critical to balance campus-based faculty effort with commitments overseas. International programs that pull faculty away from Cambridge for extended periods of time have the potential to adversely affect faculty teaching, supervision and advising capacities on campus and weaken the education of our own students. The impact of any teaching or service "drain" should be carefully assessed for each project that includes a substantial commitment of faculty time overseas, and this assessment should help guide decisions on the Institute's engagement with the project. Measures should be taken to ensure that extended faculty absences do not place unreasonable burdens on the home department, and in cases where replacement instructors are required to temporarily replace regular faculty effort, the instructors should be of the highest quality and effectiveness. Costs for replacement teaching or related activities should ideally be included in the budget of the international activity.

7. International projects should be financially sustainable and should enhance campus-based resources.

International projects should be carefully reviewed at the proposal stage to ensure that adequate financial resources will be available to carry out the intended project. A thorough accounting should be conducted during the budgeting process in order to identify the real project costs that might arise from an international commitment. For example, the organization and management of international activities typically place additional burdens on MIT's administrative infrastructure. Such issues as transfer payments, overseas compensation, export controls, intellectual property rights, travel insurance, and risk management usually become more complex in an international context. The Institute should consider ways to help ensure that international engagements, especially major institutional initiatives, do not overtax our campus infrastructure by causing an effective financial burden due to the demand for increased services. For example, if it becomes clear that a particular project will draw heavily on a certain campus resource, then consideration should be given to including the costs of that resource directly within the project's budget.

An alternative to this direct-charge approach might be the assessment of a more general "international engagement fee" on projects with a substantial international component. The feasibility of such practices should be explored with the Office of Sponsored Research and the Office of the Vice President for Finance. Some portion of the funds collected in this manner could be pooled to create an internal trust to support or help seed underfunded international activities. Other considerations for offsetting additional costs of international engagements might involve the inclusion of graduate fellowship support or the establishment of professorship funds, which could benefit the departments or schools that participate in such engagements. Still other strategies beyond those mentioned here may be possible. Clearly, no single approach to financial sustainability will apply to all circumstances, and strategies should be tailored to particular project needs.

8. International engagements require awareness of cultural differences.

Despite the increasing ease of international communication and travel, MIT faculty, staff or students who live and work overseas as part of an international collaboration may sometimes experience cultural or social norms that are quite different from, or that may even conflict with, prevailing standards at the Institute. The IAC does not believe that a set of specific guidelines can be proposed that reliably addresses all situations where cultural differences may be a factor in assessing the viability of an international collaboration. However, as a general guideline, we recommend that the Institute's international engagements reflect the Institute's fundamental values and intellectual and social principles, such as openness, inclusiveness, and non-discrimination. Specific concerns related to cultural differences should be addressed as part of the process for reviewing proposed international engagements, and MIT participants in

international engagements should receive adequate preparation in advance of visiting foreign locations.

V. <u>The distinction between faculty and institutional initiatives</u>

It is useful to distinguish between international projects involving individual faculty or groups of faculty working independently, and those projects that involve a larger-scale commitment of resources. In this sense, a "faculty initiative" may be characterized as a voluntary commitment by a specific, self-organized group of faculty to undertake a given program. Consistent with normal policy, faculty may choose to participate or not, depending on whether the project matches their research interests, and subject to departmental and school approval.

By contrast, an "institutional initiative" may be defined as a commitment made by the head of a formal unit – a Department, Laboratory, Center, School, or the Institute as a whole – of the resources of that unit, including its faculty, to undertake a given program. While all faculty have a degree of autonomy and could choose to "opt out" of this type of project, such a commitment in some sense may bind the faculty (and perhaps also staff and students) of the particular unit to participate in the project (or to cover any shortfalls in teaching, etc., induced by the commitment of faculty colleagues), because the unit is choosing to commit its common resources to the project.

It is important to recognize that all international engagements that include MIT as a participant will be perceived by outside observers as reflections of MIT's reputation and sense of purpose, regardless of the size or the scope of the project itself. Particular care should be taken to review the quality and appropriateness of each Institute-sponsored project that includes an international dimension.

VI. <u>Education</u>

Provide MIT students and faculty with high quality opportunities to learn about and engage with the world.

There is wide agreement that providing our students with substantial international experience during their years as degree candidates at MIT is critical to preparing these students to become leaders in the global environment, whether in education, industry or public service. The September 2007 report of the Committee on Global Educational Opportunities for MIT Undergraduate Education (GEOMIT) provides a detailed assessment of international opportunities currently available to our students and recommendations for expanding those programs that have proven to be successful, as well as for developing new programs. While international education can take place to some degree in classrooms on the MIT campus, GEOMIT emphasizes the importance of providing each undergraduate student with an

opportunity to have at least one on-site experience in a foreign country. The experience may consist of formal study abroad, internship, research-related field work, or similar direct engagement. To maximize its educational impact, an international experience should ideally include three components: preparatory work in the classroom, emphasizing foreign language study as well as the understanding and appreciation of foreign cultures; an experience abroad; and a retrospective classroom-based or other exercise designed for the student's own reflection on, and assessment of, the experience.

An MIT education is a rigorous endeavor, and we must ensure that any international components of a course of study serve to enhance the educational experience, not dilute it, with the ultimate aim being a transformational experience for the student that will remain a lasting benefit. For this reason, GEOMIT asserts the importance of close faculty oversight of global educational initiatives and policies. Relative to research partnerships, educational engagements will necessarily tend to be limited in number and subject to strong central standards and controls.

Dedicated faculty involvement will, of course, be required to help design and teach subjects that have international dimensions and to oversee globally-oriented programs. In these efforts, faculty themselves may learn new approaches to teaching from the perspective of different cultures and use this knowledge in advising students about international educational opportunities.

MIT graduate students are exposed to somewhat different opportunities for international engagements than our undergraduates, in part because foreign national students currently comprise nearly 40% of the graduate population, thus providing a local opportunity for graduate students in general to gain exposure to different cultures of teaching, learning and conducting research. Nevertheless, it is important for graduate students to reach beyond the MIT campus for direct international experience, and the IAC strongly encourages international research partnerships that include graduate student participation wherever feasible.

VII. Research

Provide MIT students and faculty with unique and enhanced research opportunities world-wide.

MIT has been engaged in global research activities for many decades, with science itself having been a global pursuit through most of the 20th century. MIT researchers have regularly crossed oceans and continents to collaborate with international colleagues, who in turn have been welcomed in substantial numbers on our campus. The internet has made international collaboration almost as easy as working with a colleague across campus. But in recent years, the imperative for engaging internationally has increased substantially. This is due in part to challenges from abroad to traditional U.S. dominance of wide areas of scientific and technical research. Indeed, in some fields, the U.S. is perceived to be lagging behind international efforts.

For example, the world's largest particle accelerator and plasma fusion laboratories are located outside the United States.

Another factor contributing to the urgency of international research efforts is the global nature of many of the great technological and scientific challenges that face current and future generations, such as global warming, energy, poverty, health care, clean water, and the quality of our ocean ecosystems. Similarly, the globalization of many industries, including the research components of most large corporations, provides a new context for the globalization of science and technology. These changes have profound implications for how our faculty conduct their research and for the kinds of opportunities we should provide to our graduate students and post-doctoral scientists and engineers.

In this context, the committee considered whether to recommend that MIT focus on particular countries or areas of the world as part of its international strategy. Because the opportunities to engage in international activities will normally exceed the Institute's capacity for such relationships, MIT needs some framework in which to prioritize these opportunities. While striving for a presence in every major region of the world may be an appealing long-term goal, we believe that MIT should develop targeted, long-term engagements in multiple regions, based primarily on the fit with MIT's core educational and/or research objectives, which in turn will be driven by faculty interests, and based also on the capacity of certain countries or regions to provide the conditions for successful engagements (as discussed in Section XI of this report).

The IAC proposes the following set of general guidelines for international research engagements:

- MIT should identify as priorities international projects that have the potential to best serve the nation and the world through innovative research.

- Reflecting MIT's unique talents for multi-disciplinary approaches to research, we should encourage initiatives that involve faculty from different departments and schools, working on a common purpose.

- Again reflecting MIT's distinctive culture, initiatives that integrate educational and service opportunities with research should be encouraged, as should those initiatives that apply knowledge to practice.

- Faculty from appropriate disciplines should be consulted widely before the administration decides to pursue a particular institutional activity. Faculty "buy-in" is essential for the success of such projects.

VIII. <u>Service</u>

Undertake international service activities that build on MIT's strengths and leadership, while providing new research and educational opportunities for our own faculty, students and staff.

The expertise of MIT's faculty and students is highly sought after around the globe. Very often, opportunities to help overseas partners build capacity in educational, research or industrial areas are made attractive by the amount of financial support that can be gained through such engagements. The IAC believes that capacity building in foreign nations, whether related to educational programs or research initiatives, may be desirable in some areas of the world, not least because of the global reputational benefit MIT may gain from such accomplishments. But such service-oriented initiatives are most valuable and can be justified only when MIT gains some tangible educational or research benefits from the project as well. Many such activities can be asymmetrical: MIT provides a capacity-building service in return for other benefits, such as student education through field or project-based experience, or access to other areas of research. In general, we recommend that "deliverables" associated with such projects not include a guarantee of technological innovations or a commitment to start up new companies. Such projects should, by their nature, be limited to a reasonable term, and not extend indefinitely, although continuing connections such as research collaboration or student exchange may be desirable.

In cases where MIT does engage in capacity building, it is preferable for MIT to teach foreign faculty how to improve their capacities in education or research rather than to devote our direct efforts to creating new institutions or programs or to teaching non-MIT students in foreign locations. For example, the MIT Sloan School has a long tradition of engaging in international projects which focus on capacity building rather than on MIT teaching abroad, having played key roles in the development of the Indian Institution of Management in Calcutta in the 1960s; the Nanyang Technological University in Singapore in the 1980s; and the International MBA (IMBA) Programs at Tsinghua and Fudan in the 1990s, whose graduates are considered Affiliate Alumni of MIT. Sloan's programs of this type are implemented with an innovative International Faculty Fellows Program through which more than 200 foreign faculty have been mentored by Sloan School faculty for a semester at MIT, then have returned to their home institutions to teach in their own programs. All of these initiatives have provided important resources for both MIT and the Sloan School.

MIT's current activity related to the establishment of the Masdar Institute of Science and Technology in Abu Dhabi is another example of capacity development. The MIT Technology and Development Program has provided direct advice and assistance to Masdar in the structuring of graduate degree programs, faculty recruitment and the development of research agendas. Masdar's focus on advanced energy technologies has led to its close association with, and

support of, the MIT Energy Initiative.   Although it is too early to assess its outcome, the engagement with Masdar, like those described in the Sloan School, represents a working model for international partnerships that build capacities overseas while at the same time benefiting MIT through ongoing collaborations.

IX. <u>Campus Community</u>

Maximize the quality of our educational, research and service programs by attracting to MIT the best faculty and students from around the world.

As the GEOMIT Report states, "Just as MIT is in the world, the world is also at MIT". As the statistics shown in **Appendix 3** suggest, the MIT community already includes a significant international population. Even as the Institute extends its activities overseas, it should seek to continually strengthen its faculty, staff and student populations through recruitment efforts that welcome the best candidates regardless of national origin. Expanding our connections to the best faculty and students throughout the world should be a primary goal of our international activities because it will enhance our efforts to continue to recruit these individuals to MIT.

X. <u>Current efforts supporting global activities</u>

The following recent initiatives in support of MIT's global activities show promise of advancing MIT's global strategy, and should coordinate their efforts wherever possible in supporting MIT's international engagements:

1. Global Education and Career Development Center (GECDC)

The GECDC (http://gecdc.mit.edu/splash/) was formed in 2008 within the Office of the Dean for Undergraduate Education to enable greater support for the growth of global education as well as to provide career development programs that incorporate a global perspective. The Center's offices focus on strengthening the Institute's study abroad programs and on offering expanded guidance related to international career opportunities.

2. MIT Global Council

The Global Council, also established in 2008 and consisting of faculty from all five schools, is charged with examining and assessing existing efforts in international education, and with developing a long-range plan for the creation of a robust and ambitious, globally-active undergraduate educational program, and for a global educational and research program that will be distinctive and game-changing. The Global Council submitted its report in fall 2009.

3. Office of Global Initiatives in Resource Development

The Office of Global Initiatives works in partnership with faculty and senior administrators to secure private philanthropic support of the Institute's global priorities. The OGI also works closely with the Associate Provost responsible for overseeing MIT's planning for international education and research, in order to set the strategic direction for international fund-raising activities.

4. Global MIT website

Efforts are continuing to develop a virtual data base of international activities at MIT that can be continually updated on the Global MIT website (http://global.mit.edu/index.html), which will be available to members of the MIT community as well as external groups which seek information on the Institute's programs in international education, research and service.

5. MISTI Global Seed Funds

The MIT International Science and Technology Initiative (MISTI http://web.mit.edu/misti/) has established a program that invites proposals from faculty and research staff that involve collaborations with foreign counterparts and that encourages student participation. The program includes a general fund as well as country-specific funds.

XI. Practical recommendations as we move forward

1. Identify and pursue global areas of interest

Earlier in this report we suggest that MIT should seek international engagements at the institutional level in selected areas of the world, knowing that resources will constrain the number of possible engagements that the Institute will be able to pursue at this scale. These engagements should be based primarily on how strongly the activities in foreign locations complement our own interests in research and education, and also on which countries or regions appear to offer the greatest intellectual talent in these areas of mutual interest. Just as MIT's reputation of producing innovative research in science and technology has traditionally attracted some of the best international talent to MIT, so will this reputation enable MIT to engage more extensively with this talent overseas. In this way, our research-based engagements may represent the most powerful leading edge of our international strategy. When research engagements are formed in ways that bring together complementary talents at the forefront of innovation, educational opportunities are very often likely to follow, as are service-oriented activities.

In addition to sharing the *content* of our research interests, it is important that our potential international partners have the *capacity* to provide the institutional and infrastructural conditions under which such engagements are most likely to succeed. While financial considerations are necessarily part of any thorough assessment of a potential international engagement, the opportunity to access funding for a particular activity should not by itself be the motivating factor.

In addition to universities, foreign entities potentially having such capacities might include corporations, governments, NGOs, foundations, hospitals, or independent research institutions. Ideally, such entities will be clustered around selected areas within countries or regions, forming hubs of talent offering multiple opportunities for engagement in terms of content or structure.

International partnerships at the institutional level do not necessarily succeed overnight, regardless of the level of resources that are made available to the activity. MIT learned from the Singapore-MIT Alliance for Research and Technology (SMART http://web.mit.edu/SMART/) that large, institutional projects may eventually emerge from a series of smaller engagements with a particular country or region, and these larger projects are able to build on the accumulation of earlier experiences. These smaller engagements can be viewed in some sense as experimental engagements that hopefully will lead to successful longer-term partnerships in certain cases. For example, the Singapore-MIT Alliance for Research and Technology (SMART) represents an expanded scale of international engagement for MIT in terms of the establishment of the Institute's physical presence overseas, with MIT faculty and staff resident in Singapore, in a facility that is dedicated to SMART. While SMART may provide a model for similar engagements, we believe that MIT will have a limited capacity for this level of engagement, primarily due to the significant investment of institutional resources that such projects require, and thus MIT should carefully assess the costs and benefits associated with potential SMART-like engagements in light of the guidelines set out in this report.   While MIT's physical presence overseas might be desirable in some situations, successful international engagements should not necessarily depend on this type of model.

2. Expand faculty working groups

We recommend that the MIT administration continue to support the faculty working groups that are currently engaged in the design of possible strategies for international engagement in specific countries or regions. The faculty working groups grew out of discussions with the administration and are formally sponsored by the IAC. A strategy document for India has already been produced, one for China is in draft form, and a document related to the Middle East will be undertaken soon. It is important to note that President Hockfield's 2007 visit to

India and her anticipated visit to China in 2009 serve as powerful outreach gestures to facilitate conversations with these nations aimed at forming collaborative partnerships.

The opportunities identified by the working groups will ideally combine research, educational, and perhaps capacity-building efforts, based on mutual interests between diverse areas of MIT and entities within countries or regions with whom we might form relationships. Drawing on the expertise of their members, the faculty working groups have the ability to identify specific areas of research that hold the most promise for innovative results, while acknowledging that research priorities often change, particularly in the context of international collaborations, and that MIT must be prepared adjust its international strategies as necessary.

The current working group efforts related to India, China and the Middle East should serve as models applied to additional countries, regions, or thematic areas in which MIT may perceive matching interests. In this regard, the IAC encourages the Institute to consider forming similar working groups for Africa, Latin America, Japan, Western Europe and Russia, areas that we believe to be of significant potential interest to MIT research and educational programs. The IAC would encourage the working groups to use the observations and guidelines set out in this report to help frame their discussions, and to work collaboratively with the MIT Global Council on issues of mutual interest.

3. Strive to provide an international experience for all students.

Consistent with the recommendations of the Committee on Global Educational Opportunities for MIT Undergraduate Education (GEOMIT), the IAC urges each School within the Institute to expand the number of opportunities for MIT undergraduates to gain high quality international experiences without academic or financial obstacles.

4. Increase the proportion of international undergraduates.

MIT has traditionally kept the proportion of students who come from outside the U.S. at a level of 8% of the total undergraduate population. The IAC sees no reason, in this increasingly global environment in which some of the most qualified students worldwide are available outside the U.S, to continue to adhere to this particular level. We therefore encourage the Institute to consider raising this level beyond 8% over the coming years, assuming any increase would still be compatible with the Institute's undergraduate financial aid policies and constraints.

5. Encourage open communication of developing international projects

All faculty should be encouraged to keep their department heads informed of developing international activities. Department heads in turn need to inform deans, who should regularly share information on international projects at Academic Council and Deans' Group meetings. MIT should examine ways to improve, where possible, the coordination of individual school and department international activities with common Institutional strategies.

6. Increase support for the international community at MIT

The already significant international community at MIT will almost certainly grow as the Institute develops new global partnerships that bring overseas participants to Cambridge. The Institute should consider ways to make these individuals feel fully supported while in residence at MIT by strengthening community-building efforts for visiting faculty, scientists, students, post-docs and similar groups. At the same time, it is important to recognize that a growing volume of contacts with foreign individuals, especially those who come to Cambridge, directly affects the demands placed on such services as the MIT Libraries, the International Scholars Office and the International Students Office. It is likely that these areas will require additional support for infrastructure if these demands continue to increase.

7. Continue to expand fundraising opportunities for international activities

The competition for resources needed to support advances in education and research is moving from a national to an international arena. The Institute will not be able to rely solely on traditional, U.S.-based sources of support for its activities, and must strengthen its pursuit of widening opportunities for financing our activities through international sources. In this regard, MIT should also recognize the importance of developing and strengthening its connections with an expanding international alumni base, especially its graduate alumni. In addition, MIT should explore strategies for joint fundraising efforts with foreign entities that build upon, and could be leveraged by, our collaborative international engagements. This will require a strategy of linking the philanthropic cultures of particular countries or regions with our research and educational activities in these areas of the world. The Global Initiatives Office in Resource Development, cited earlier, is a positive step in line with these recommendations, and this office is developing a strategy document to aid this effort.

MIT should also explore the development of more regular sources of funding for international research through domestic federal agencies as well as through foundations and corporations. We should coordinate the activities of the Industrial Liaison Program in the Office of Corporate Relations with our overall global strategy.

8. Examine ways to ensure full cost coverage of international activities.

As discussed earlier under "General Guidelines", we recommend that MIT examine the feasibility of assessing an "international engagement fee" or similar financial obligation for projects having substantial international components. Possible fee structures should be explored in consultation with the Office of Sponsored Programs, the Office of the Vice President for Finance, or other offices as appropriate, with a goal of producing a white paper on this topic.

9. Strengthen our administrative process and infrastructure.

We recommend the following steps for strengthening the internal administration of our international activities:

- Rationalize the naming of MIT's international program**s**

With a growing number of programs focused on individual foreign countries, the Institute should take care to name these programs in ways that accurately reflect their scope of activity. As one example, "MIT-China" refers to a specific program within the MIT International Science and Technology Initiative (MISTI) that supports student internships abroad. Other programs related to China (but outside MISTI) may also appear to fit under the heading "MIT-China", when in fact they have a different focus. The IAC recommends a review of current institutional programs involving specific countries to ensure that program names are accurate.

- Provide our faculty with guidance on international activity proposals.

Facilitating the process by which our faculty submit their international proposals through the MIT administrative system is an important practical goal. We should provide faculty who have developed, or are considering developing, an international activity with clear directions on getting advice on structuring the activity and on securing Institute approval for the activity. We propose informing the faculty that the IAC is the first point of contact for proposals with significant international engagement. The primary role of the IAC in this regard is to assess the overall quality and direction of the proposed project and to provide feedback to faculty on these issues. This is consistent with the IAC's charge to advise the senior administration on the appropriateness of individual international proposals. As needed, the IAC will refer emerging projects to the Office of Major Agreements, which has developed a document outlining steps to be taken for major institutional partnerships and initiatives to obtain Institutional approval, and/or to the Office of Sponsored Programs. Both offices are able to advise faculty on practical, administrative issues related to international engagements.

- Establish a senior-level international office.

MIT should consider eventually establishing a central, senior-level office, reporting directly to the Provost and charged with overseeing the Institute's international activities, and with staffing commensurate with our global ambitions, which could effectively assume the IAC's role as a central administrative resource for faculty and could serve in a coordinating capacity for projects that have overlapping content or are engaged in similar areas of the world. This office would work closely with the newly-formed Office of Major Agreements, the Global Education and Career Development Center, the MIT Global Council, the Office of Global Initiatives in Resource Development, and the MIT Alumni Association, and would oversee the Global MIT website.

XII. __Toward the future__

In summary, MIT's overall international strategy will be successful if it remains aligned with the Institute's core mission and if individual activities match the high quality of education, research and service that the Institute's faculty and students have traditionally demanded. The Faculty and Administration must work in harmony to advance those activities that hold the most promise for improving the education of our students, building on MIT's traditional excellence in research, and strengthening the Institute's position at the frontier of discovery and innovation. We should choose international engagements that will complement our core campus programs, not compromise their quality or capacity. The IAC hopes that the recommendations contained in this report will help guide the Institute as it embraces the exciting international opportunities that our world has to offer.

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Appendix 1   International Advisory Committee members

Faculty Members:

Claude R. Canizares (Co-Chair) Vice President for Research and Associate Provost, and Bruno Rossi Professor of Physics

Philip S. Khoury (Co-Chair), Associate Provost and Ford International Professor of History

Suzanne Berger, Raphael Dorman and Helen Starbuck Professor of Political Science and Class of 1960 Fellow, and Director of the MIT International Science and Technology Initiatives (MISTI)

Diane E. Davis, Professor of Political Sociology, and Head of the International Development Group

Steven D. Eppinger, Deputy Dean of the Sloan School of Management and General Motors Leaders for Manufacturing Professor of Management Science

Daniel Roos, Japan Steel Industry Professor of Engineering Systems and Civil and Environmental Engineering, and Director of the MIT-Portugal Program

Richard J. Samuels, Ford International Professor of Political Science and Director of the Center for International Studies

Robert J. Silbey, Class of 1942 Professor of Chemistry

George C. Verghese, Professor of Electrical Engineering

Dick Y.P. Yue, Philip J. Solondz Professor of Engineering and Director of International Programs, School of Engineering

Victor W. Zue, Delta Electronics Professor of Electrical Engineering and Computer Science and Director of the Computer Science and Artificial Intelligence Laboratory (CSAIL)

Ex Officio Members

Phillip L. Clay, Chancellor and Professor of Urban Studies and Planning

Daniel E. Hastings, Dean for Undergraduate Education and Professor of Aeronautics and Astronautics

Steven R. Lerman, Vice Chancellor and Dean for Graduate Education, and Class of 1922 Professor of Civil and Environmental Engineering

Jeffrey Newton, Vice President for Resource Development

Douglas W. Pfeiffer, Assistant Provost for Administration

Staff to the Committee

Lily U. Burns, Staff Associate, Office of the President

IAC Report 9/3/09

Appendix 2 **List of individuals who met with the IAC**

Planning for August Meeting Panel Discussion with
- Professor Ed Crawley (CMI)
- Professor Yossi Sheffi (Zaragoza)

The View from Washington on Global Initiatives
- Mr. William Bonvillian

Research and Education Program between Mechanical Engineering Departments of MIT and KFUPM
- Professor Rohan Abeyaratne
- Professor Mary Boyce
- Professor John Lienhard

Discussion of the Global Educational Opportunities at MIT and Discussion of Principles for International Exchanges
- Dean Daniel Hastings
- Professor Linn Hobbs
- Professor Hazel Sive

The MIT Energy Initiative and International Collaborations
- Professor Ernie Moniz

MIT-Portugal Program
- Professor Daniel Roos

MIT-India Initiative
- Dr. Tuli Banerjee
- Professor Charles Cooney
- Mr. O'Neil Outar
- Professor George Verghese

Kuwait-MIT Center for Natural Resources and the Environment
- Professor Elfatih Eltahir

Appendix 2 (cont'd)

Discussion with the Provost
- Provost Rafael Reif

Update on MISTI
- Professor Suzanne Berger

International Engagements of the Alumni Association
- Ms. Beth Garvin

Discussion with Mr. John Reed

Office of Major Agreements and Proposal for the Future
- Mr. James L. Morgan
- Ms. Christina Williams

Update on International Students, Scholars, and Visas, and Libraries
- Ms. Danielle Guichard-Ashbrook
- Ms. Penny Rosser
- Ms. Ann Wolpert

Presentation on the Reykjavik University-MIT Alliance
- Professor John Vander Sande
- Professor Demitras Bertsimas
- Professor Maria Zuber

Proposed MIT Sloan School collaboration with Skolkovo - Moscow School of Management
- Professor Steven Eppinger

A Possible New Initiative with Singapore
- Professor Rohan Abeyaratne
- Professor Thomas Magnanti
- Mr. John Desforge

Appendix 2 (cont'd)

International Features of the MIT Global Change Joint Program
- Professor Jake Jacoby

South Africa Initiative
- Professor Hazel Sive

Update on the Global Council
- Professor Dick Samuels
- Professor Dick Yue

Update from members of the China Working Group
- Professor Yasheng Huang
- Ms. Jenny Liu
- Mr. O'Neil Outar
- Professor Ed Steinfeld
- Professor Victor Zue

A new MIT International Initiative: BLOSSOMS, Blended Learning Open Source Science or Math Studies: *A new video pedagogy for high school science and math classes, in collaboration with partners in Jordan and Pakistan*
- Professor Richard Larson

Appendix 3

Data on International Students, Faculty, Scholars, and Research at MIT

AY08

111 Countries are represented by international Students.
Data provided by the Office of Institutional Research.

	Undergraduate	Graduate	Postdoctoral	Faculty
Number of international/percent of total	348 (8%)[3]	2230 (37%)[4]	599 (59%)[5]	376 (36%)[6]
Top 3 Countries represented	China (25) Canada (24) South Korea (22)	China (301) South Korea (237) India (210)	China (87) India (56) Republic of Korea (46)	India (34) Canada (30) United Kingdom (30)

Percentage (and amount) of total Sponsored Research expenditures supported by international sources.	8.67% ($55,761,552)
Percentage (and amount) of total Funds expenditures supported by international sources.	17.00% ($14,034,029)

Data provided by the Office of Sponsored Programs

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[3] This number is 8% of the total undergraduate student body of 4172.

[4] This number is 37% of the total graduate student body of 6048.

[5] This number is 59% of the total postdoctoral count of 1012.

[6] This number is 36% of the total faculty population of 1009. 300 faculty members did not specify a country of origin.