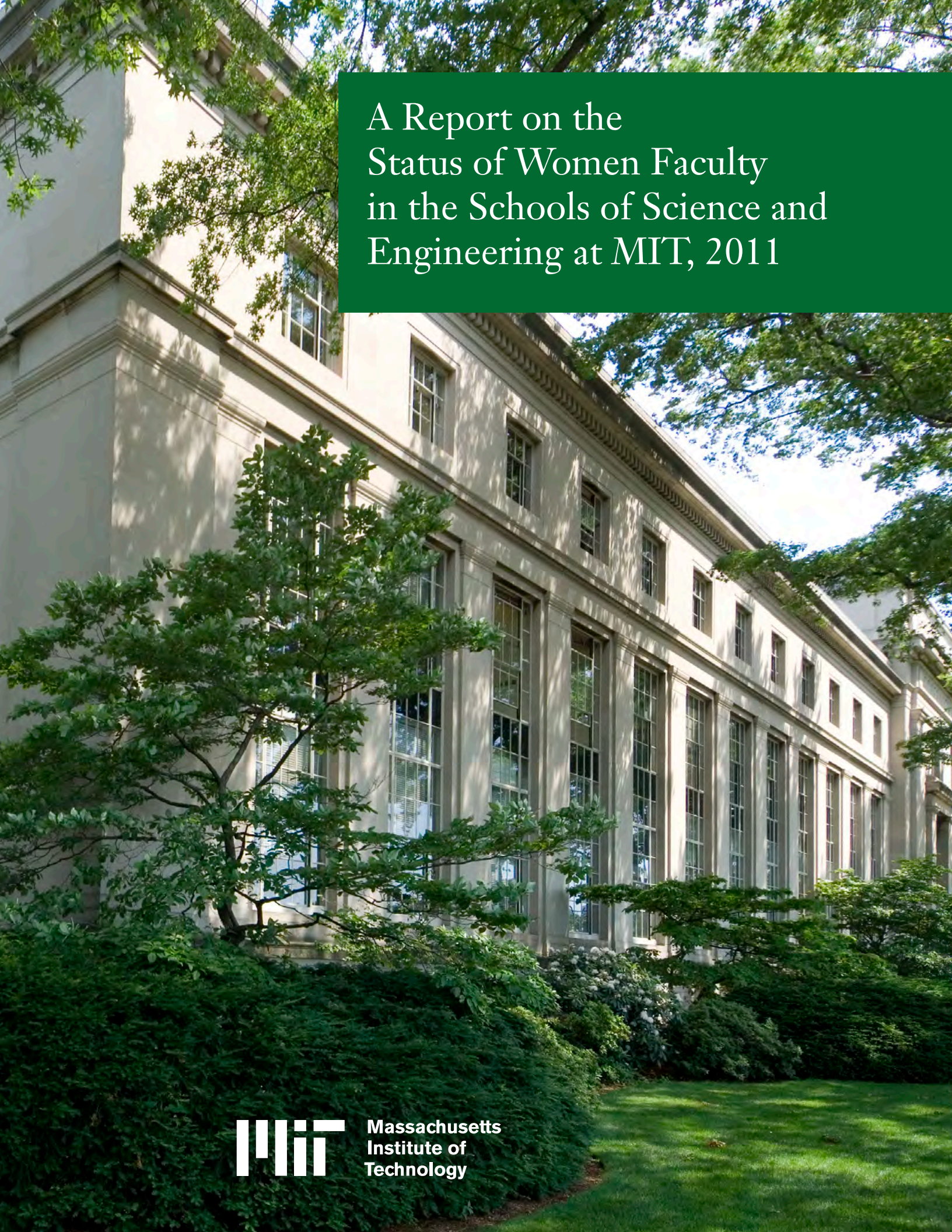
A Report on the Status of Women Faculty in the Schools of Science and Engineering at MIT, 2011



Massachusetts Institute of Technology

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Massachusetts Institute of Technology

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March 20, 2011

To the Members of the MIT Community:

At MIT, we like data, especially data that advance our understanding of an important problem. In the 1990s, a group of MIT's women faculty perceived patterns of inequitable resource allocation between them and their male colleagues. They collected data that demonstrated and quantified the problem, and they alerted the Institute's leadership, in a search for practical remedies. Compelled by the evidence, MIT responded. Today, a new ***Report on the Status of Women Faculty in the Schools of Science and Engineering at MIT*** delivers the encouraging news that the process launched by these faculty women has made a lasting, positive difference for women faculty at MIT.

It is gratifying to see that MIT's process has become a model for other institutions to improve conditions for their women faculty. The momentum of MIT's research-based changes has helped women scientists and engineers at universities around the world advocate for equitable working environments that enable them to thrive.

This new report also highlights a number of areas where we still have work to do, from more fairly distributing service on Institute committees to enhancing training for faculty mentors. These recommendations echo several from last year's *Report of the Initiative on Faculty Race and Diversity*. Recurring themes in both of these reports reinforce the importance of our efforts to strengthen MIT's culture of inclusion, so that everyone at MIT can do his or her best work.

I have enormous admiration for the faculty members who led the original study, for the many Institute leaders who have sustained the momentum since then, and for the women faculty who prepared this illuminating follow-up report. On behalf of the entire MIT community and especially on behalf of young women in science and engineering, I thank you for your important service to MIT and to the world.

Sincerely,

Susan Hockfield

Susan Hockfield

A. Summary

1. Background

This report concerns the current status of women faculty in the MIT Schools of Science and Engineering. It is written as a follow up to the 1999 Report on the Status of Women Faculty in the School of Science at MIT (chaired by Professor Nancy Hopkins and Professor Mary Potter) and to the 2002 Report of the Committee on the Status of Women Faculty in the School of Engineering (chaired by Professor Lorna Gibson) in association with the MIT150 celebration and the Symposium "Leaders in Science and Engineering: The Women of MIT", March 28-29, 2011. The purpose of the Report is to collate the experiences of women as MIT faculty members in Science and Engineering, and leaders in their fields.

The Schools of Science and Engineering conducted separate studies, which included interviewing faculty within each School. Data were collected in individual interviews, or group discussions, where faculty was split into the following groups: women faculty who were tenured in 1999; those tenured after 1999 or hired with tenure since then; and those untenured.

2. Summary of findings from the School of Science

In the School of Science, 92% of the women faculty participated and the following findings can be reported. Since the 1999 Report, the number of women faculty in the School of Science has almost doubled, with women faculty in multiple senior administrative positions.

An overwhelmingly positive view of MIT is reported. The most senior women, who were signatories on the 1999 Report, cited many positive changes. These include the increase in the number of women Science faculty, more equitable resource and salary distribution, and the increase of women in senior administrative positions. The vast majority of the tenured and untenured women interviewed emphasized that MIT offers outstanding opportunities and resources, and that the Institute is a much friendlier and supportive environment than perceived from the outside.

Despite these positive findings, within this School, all cohorts reported current problems and tensions. One concern centers on faculty search procedures, which necessarily attempt to identify and eliminate biases in the search process. This procedure can lead to the perception that women faculty are unfairly hired, and later, to the incorrect perception that standards of hiring and promotion are lower for women faculty. These misperceptions can erode the confidence of women faculty.

A complex set of concerns surround family-related issues. The real biological burden that women who bear children face is clear and family-friendly policies at MIT are viewed as very positive. However, there is some unease with the emphasis on issues and benefits related to childbearing and childcare, and further, with the perception that childcare issues are "women's" issues rather than more gender-neutral "family" issues.

A third finding is that of "expected behavior", where the expectation that women have "soft and sweet" personalities colors behavior of colleagues and students. A related finding is that mentorship by women faculty members is tied to the stereotype that women will be sympathetic mentors because of their gender.

Additionally, women faculty members expressed concern at their high level of service, both within the Institute and in their scientific communities, which can interfere significantly with research accomplishment. Exclusion from both departmental decision-making and within the field was reported, especially by tenured faculty, and may involve bias by both women and men. Junior faculty members cited a lack of respect, which presents an additional challenge at the beginning of the research trajectory. Finally, concerns surrounding the accessibility of mentoring to women faculty were described, although many concerns expressed are likely related to junior faculty in general.

A series of recommendations to ensure equity, appropriate for further consideration, could improve representation and advancement of women in the Sciences.

3. Summary of findings from the School of Engineering

In the School of Engineering, 87% of the faculty participated in the study, and the following findings and recommendations can be reported. The number of women faculty in the School of Engineering has nearly doubled in 10 years. More women faculty members are in administrative positions compared with 10 years ago. There is a strong sense of excitement among the women faculty about the intellectual atmosphere at MIT.

Family policies implemented over the last 10 years have assisted women faculty with children, although the cost and availability of childcare remains a concern, mostly for junior women faculty. Women faculty members participate in influential committees, but some think that they are on too many committees. Senior women faculty members feel that the environment for women faculty has improved since the 2002 study, but also spoke of the cumulative effect of past inequities. Department Heads need to ensure that teaching and committee assignments are fair and that faculty members are treated with respect.

4. Reflection

The major finding of these two studies is that there has been remarkable progress for women faculty in Science and Engineering at MIT since the 1999 and 2002 studies, in terms of equity, status and numbers. An additional key result is that, despite this progress, issues remain, and new issues have emerged, that can negatively impact the careers of women faculty. The most important conclusion of this Report is that the efforts of central administration, working collaboratively with women faculty, need to be continued for the foreseeable future.

B. General Introduction

1. History

MIT was formally created on April 10, 1861, with the signing of its charter by the Governor of Massachusetts. The first woman student, Ellen Swallow Richards, received her SB degree in Chemistry in 1873. From 1876 until her death in 1911, she was an instructor at the Institute, first in chemistry and mineralogy, and then in sanitary chemistry. The first woman faculty member with a professorial appointment was Elspeth Rostow, who was hired as an Assistant Professor in the Department of Economics and Social Science in 1952. The first women faculty members in Science and Engineering, Emily Wick (Department of Nutrition and Food Science) and Sheila Widnall (Department of Aeronautics and Astronautics), were not hired until 1959 and 1964, respectively. The numbers of women faculty in Science and Engineering began to rise significantly in the early 1970s, but by the mid- 1990's women still comprised only 6-8% of the Science or Engineering faculties.

2. Background

In 1994, tenured women faculty in the School of Science brought concerns about the status and the small number of women faculty in Science to the attention of the Dean of Science. In 1995 he appointed a committee to document and study the issues. The committee learned that each generation of women had joined the MIT faculty believing that only the greater difficulty of combining family and work would be an obstacle to their careers relative to those of their male colleagues. However, some years after tenure, and despite their professional success, many women faculty experienced professional marginalization, which included receiving fewer resources than their male colleagues and being excluded from important decision-making roles in their departments. In 1995 there were only 15 tenured women faculty and 7 junior women in Science vs. 197 tenured men and 55 junior male faculty members, and the percentage of women had remained virtually unchanged for 20 years. There had never been a woman Department Head or Dean in the School. The findings of the Committee on Women Faculty in Science were made public in 1999 at the request of the Chair of the MIT Faculty in an article that came to be known as 'The MIT Report' (MIT Faculty Newsletter, March 1999, http://web.mit.edu/faculty/reports/sos.html).

The 1999 Report on the Status of Women Faculty in Science had a remarkable impact both within MIT and nationally. At MIT, then President Charles Vest acknowledged the problems and began addressing them. As part of this effort, Provost Robert Brown established committees in each of the other four Schools at MIT to carry out similar studies. The findings of the report from the School of Engineering http://web.mit.edu/faculty/reports/soe.html were very similar to those in Science, with three primary issues of concern identified: (1) The low number of women faculty (34 out of 348 in September 2001) and hiring and retention issues in two departments; (2) Marginalization that was manifested as exclusion of tenured women faculty from group research grants or doctoral thesis committees, lack of representation on influential departmental committees, frequent changes to teaching assignments, and few women in academic leadership roles; and (3) The difficulty of combining work and family responsibilities, particularly for junior faculty.

3. MIT's response to the Reports on the Status of Women Faculty in Science (1999) and Engineering (2002)

The Deans of Science and Engineering, Robert Birgeneau and Tom Magnanti, responded immediately to the concerns reported by women faculty: they corrected inequities of salary and space, appointed women faculty to administrative roles, and devised and began aggressive search procedures to identify and recruit exceptional women faculty. While highly effective, it was apparent that additional institutional solutions would be needed to ensure that progress continued and became part of MIT's practices and culture.

The approach adopted by the Vest administration, and continued under the Hockfield administration, was to bring women faculty with a deep knowledge of the problems into a partnership with powerful administrators (the President, Provost and Deans) so that together they could devise and rapidly execute solutions pertaining to equity, hiring, family-work conflict, and inclusion in the administration. Under Vest a Council on Faculty Diversity was created. It was co-chaired by the Provost and by Professor of Biology, Nancy Hopkins, who was appointed to the Academic Council (a committee of the central administration that is chaired by the President of MIT), including the subcommittees of Academic Council that review all faculty promotions and salaries. Hopkins also worked with female faculty chairs of five Gender Equity Committees in each of the Schools of MIT, and these chairs worked with the Deans of the Schools to ensure that women faculty issues were rapidly addressed. Under Hockfield, two Associate Provosts oversee issues involving women and minority faculty, replacing the Diversity Council. New Associate Deans in Science and Engineering also oversee gender issues, among other responsibilities. Examples of administrative actions taken over the past decade to improve the status and increase the numbers of women faculty include the following:

- New policies to address issues of work and family: parental release of one term following the birth or adoption of a child, extension of the tenure clock by one year for women who bear a child, access to "parents in a pinch", and financial assistance for travel expenses related to childcare while on professional business.
- Review of all applications from women for faculty positions at the level of Deans' offices.
- Conscious effort by Department Heads to include women faculty on search committees; education of search committees about unconscious bias and how actively to seek applications from women; defining faculty searches more broadly to open up a larger pool of potential applicants.
- Education of Department Heads to be aware of marginalization of women faculty, particularly senior women, so they would make efforts at inclusion.
- Effort to standardize mentoring policies across MIT by re-issuing and discussing a guide to effective mentoring of junior faculty.

4. Assessing the success of a decade of administrative work to improve the status and representation of women faculty in Science and Engineering at MIT

As a follow up to the 1999 and 2002 Gender Equity Reports in Science and Engineering, and on the occasion of MIT's 150th anniversary celebration, including a Symposium entitled "Leaders in Science and Engineering: the Women of MIT", March 28/29, 2011, the women faculty in Science and

Engineering elected to re-examine the issues raised over a decade ago by senior women faculty. The approach they selected was to interview the current women faculty, either in small groups or individually, and to collect numerical data that reflects success in hiring women faculty and reflects women faculty's professional success.

Over 90% of the women faculty in Science and 87% of the women faculty in Engineering participated in the interviews. The women were interviewed in three separate groupings within each School: women who were tenured in 1999 (at the time of the 1999 Report on Women Faculty in Science and at the time the Engineering study started) (called 'senior women faculty' in this report), women tenured or hired with tenure after these dates (called 'mid-level tenured women faculty'), and junior women faculty. The methodology used and the numbers of women involved are indicated in the body of the report.

The overwhelming finding in both the Schools of Science and Engineering and among all three groups of women faculty is the remarkable success of MIT's efforts, both in increasing the numbers of women faculty (Figure 1) and in improving job satisfaction. MIT today deserves to be seen as a model institution for women who aspire to high-powered careers in Science and Engineering.

Despite the progress, there are still areas for improvement. Issues of concern include old problems that persist despite remedies, new issues that have arisen, and even problems that result from solutions to previous problems. In addition, the numbers of women faculty in the physical sciences, math, and some fields of engineering remain extremely low, in large part because of the small number of women in the pipeline. It is clear from the information gathered that the collaborative efforts of the MIT administration with the women faculty will need to continue for at least a decade to maintain the stunning progress that has been achieved. As one of the senior women faculty remarked, *"This is a celebration – with caveats."*

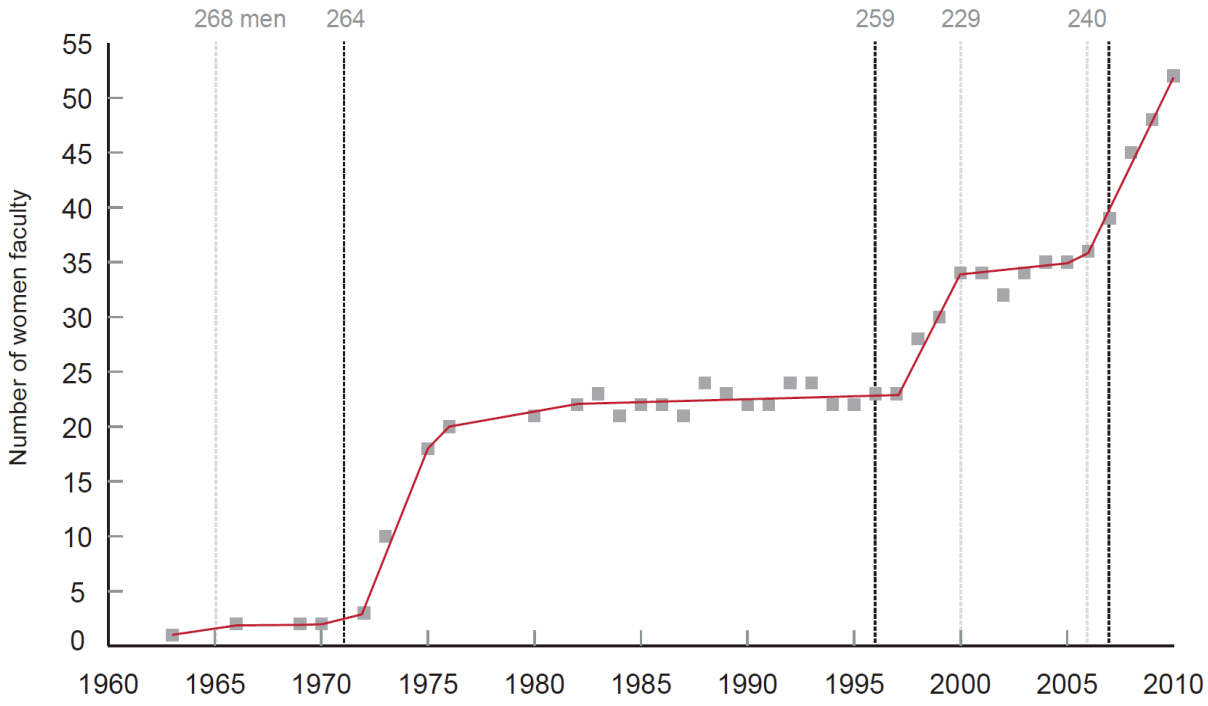


Figure 1. **Number of women faculty in the School of Science at MIT (1960-2010).**
(Revised from Hopkins, MIT Faculty News Letter, no. 4, vol. XVIII, 2006.)

C. Report on the Status of Women Faculty in the School of Science at MIT, 2011

Faculty Committee

Janet Conrad (Physics)

Nancy Hopkins (Biology)

Terry Orr-Weaver (Biology)

Mary Potter (Brain and Cognitive Sciences)

Paola Rizzoli (Earth, Atmospheric and Planetary Sciences)

Hazel Sive (Chair) (Biology)

Gigiliola Staffilani (Mathematics)

JoAnne Stubbe (Chemistry)

1. Introduction

Participants for this study were women faculty from the MIT School of Science: 49 out of a total of 53 faculty members with primary appointments in the School of Science, as of November 2010, participated, representing 92% of the women faculty. Faculty members were grouped as follows: senior faculty who signed the original 1999 School of Science Gender Equity Report; mid-level tenured women faculty who received tenure at or after the 1999 Report was published, or who came to MIT as tenured faculty after 1999; and untenured faculty. Thus, participants included 13 senior women, 19 mid-level tenured, and 17 untenured faculty members.

Increasing numbers of women faculty members in the School of Science have had and are currently holding senior administrative roles at the Department, School, and Institute levels. In 2004, Susan Hockfield, Professor of Neuroscience, became the first woman and the first life scientist to hold the title of President of MIT. Women faculty from the School of Science currently or formerly in some administrative positions include: Tania Baker (former Associate Department Head, Biology); Sylvia Ceyer (Department Head, Chemistry); Jacqueline Hewitt (Director, Kavli Institute for Astrophysics & Space Research); Jacqueline Lees (Associate Director, Koch Institute for Integrative Cancer Research); Susan Lindquist (former Director of the Whitehead Institute); June Matthews (former Director of the Laboratory for Nuclear Science); Terry Orr-Weaver (first woman to be Biology Graduate Officer); Hazel Sive (Associate Dean, School of Science); Gigliola Staffilani (Graduate Academic Officer, Mathematics); Li-Huei Tsai (Director, Picower Institute for Learning and Memory) and Maria Zuber (Department Head, Earth, Atmospheric, and Planetary Sciences).

Many women faculty members in the School of Science have received national awards. Twelve are members of the National Academy of Sciences, 4 have been the recipients of the National Medal of Science, 13 are Fellows of the American Academy of Arts and Sciences, and 2 are NIH Pioneer award winners. Five received NSF Career Awards and 3 the Presidential Early Career Award; one faculty member received both awards. One is a recipient of the MacArthur Fellowship, 10 are Fellows of the American Association for the Advancement of Science, and 5 are Fellows of the American Philosophical Society.

Data were gathered in a series of discussions that were conducted individually or in small groups (see Appendix). Women faculty shared their experiences as MIT faculty members, and leaders in their fields. Any topic of interest to the faculty was discussed, but each group also addressed experiences regarding research, teaching and service, as well as the interface of family and career. Potential action items were suggested, to form the basis for further discussion and prioritization. Demographic data, on the number of faculty, the number of tenured faculty and the hiring of faculty are given in Section E.

2. Conclusions of the Senior Faculty

In 1995 there were 15 tenured women faculty in MIT's 6 departments of Science (and 197 tenured male faculty). There were 2 women with primary faculty appointments in Engineering and joint appointments in Science. Fourteen of the 17 tenured women Science faculty members are still at MIT. We held two 2-hour meetings with 10 of the women and individual conversations with two others. An additional woman provided commentary. The women were asked to address the questions: "*What has changed since the*

1999 report on the status of women in Science at MIT? What hasn't changed? Have any new issues arisen since 1999?"

Remarkable progress

The consensus of the women who were interviewed is that progress for women faculty in Science at MIT over the past 15 years has been remarkable. These changes have so dramatically improved the status and lives of women faculty in Science at MIT that they deserve to be regarded as a major accomplishment by the MIT administration. The changes that have had the greatest impact are the following:

- Increase in the number of women faculty in positions in the academic administration of both the School of Science and MIT itself, including the President of MIT, 2 of 5 academic Deans of MIT, an Associate Dean of Science, and 2 of 6 department heads of Science. As several women faculty said of these changes, *"Who would have thought it possible in our lifetime?"*

- Acknowledgement of and commitment by MIT to address issues identified in the 1999 report as evidenced by the appointment of a woman faculty member to the Academic Council whose job is to address women faculty issues, including women's under-representation and their equitable treatment. Under President Hockfield this position was up-graded to be an Associate Provost. Also, initially, MIT established Gender Equity committees in the five Schools to review equity data with the Deans and serve as a network of women faculty with knowledge of and access to the administration. Later, an Associate Dean of Science, appointed by the Dean of Science, included women faculty issues in her portfolio.

- Removal of the stigma for women bearing children, and making the use of family leave policies standard practice for female (and male) faculty throughout MIT, a change that was visibly reinforced by locating a new day-care center on Stata's first floor. As one woman remarked, *"Today junior women faculty can have a child while taking family leave/extension of the tenure clock and get tenure, which had never happened in Science at the time our committee was formed in 1995."*

- Increase in the percentage of women faculty in the School of Science from 8% to 19%.

- More equitable distribution of resources and rewards, and more effective mechanisms to address inequities when they arise, including through the continued network of senior women faculty and enlightened Deans and Department Heads.

- Change in attitudes among some male faculty including, (a) awareness that search committees must consciously look for women and minority applicants since diversity is important and since potentially qualified female and minority applicants can be overlooked; and (b) the fact that younger male faculty find it natural to have women in powerful leadership roles.

- Deans and Department heads who are proactive in hiring women faculty and addressing women faculty issues.

- Uniform policies for mentoring junior faculty, which were adopted by the School of Science and the School of Engineering, though not all faculty members may be aware of them.

Remaining and resulting problems

Despite the stunning progress, however, the group concluded that, *"we aren't there yet."* Most problems that remain result from the fact that solutions were either imperfect or have not been in effect long enough to eliminate the problem they address, or are hard to enforce continuously and uniformly in all departments of MIT. Some problems have resulted from the solutions themselves.

At the time of the 1999 report, President Vest remarked to some of us that it would be relatively easy to fix resource inequities that arise from marginalization, but more difficult to prevent the marginalization that occurred as women advanced in their careers. This comment turned out to be prescient. The following comments describe some women's experiences and reveal that marginalization occurs not just within MIT but within the profession outside MIT as well.

"The changes that have taken place at MIT changed my life including my extreme feelings of marginalization. I feel supported, included, and protected from gross inequities by the network of tenured women faculty and by the now many more enlightened male administrators and colleagues who are aware of these issues. I feel included at MIT by seeing women in powerful administrative positions, seeing women winning the awards they deserve, seeing more young women able to have families and a successful career. However, I still sometimes feel excluded from important professional activities. Many men who are in positions of power within and outside MIT still work only with men, or with women ten or more years younger than they are, but they seldom seem able to work with women their own age as equals."

"My male postdoc was invited to an international meeting to talk about work initiated in my lab, but I was not invited. A colleague told me to invite myself but I could not imagine doing that."

"My field is bad [for women] in Europe. I won't even go there any more. Germany and Switzerland are terrible for women in my field."

"I am tired of sending notes to organizers of scientific meetings telling them to put women on scientific programs as speakers. It is embarrassing to have to do this. I know many women scientists who do it. There need to be mechanisms that make it unnecessary for professional women scientists to have to do this, such as requiring there be women on the program in order to receive federal funding for a meeting. NIH used to require this. But what can one do about meetings not funded by NIH? Meetings in Europe are often the worst."

A new issue that emerged was prompted by the following comment made by one of the woman faculty members: *"Undergraduate women ask me how they should deal with their male classmates who tell them that they only got into MIT because of affirmative action."* This comment prompted some women to note that when they win an award or other recognition it is not uncommon for a colleague on the selection committee to say, *"it was long overdue that the award be given to a woman,"* indicating that gender was a significant factor in the selection. These kinds of statements deprive the awardee of the satisfaction of knowing that it was purely because of respect for her accomplishments that she got the award.

3. Conclusions of the Mid-level Tenured and the Untenured Faculty

Data that led to the conclusions reported here were gathered in a series of discussions conducted individually or in small groups (see Appendix). Each conclusion reported here reflects views of many faculty members, but may not reflect the views of the entire cohort interviewed. Similarly, specific views expressed by one or a very small number of faculty members are not reported.

A positive view of MIT

The vast majority of the tenured and untenured women interviewed emphasized that MIT has offered them outstanding opportunities: *"My experience has been that this has been a fabulous place to work"* and *"MIT has given me a platform for recognition"*. Institutional family policies have benefited many women faculty: *"MIT is the best place I have been. There was not a single time when I felt there was a conflict of personal life and work imposed by the workplace."* In addition, the Institute is seen as a place more welcoming to women than many: *"MIT is ahead of the curve."* Although MIT is not seen as a gentle place, it is friendlier and more supportive than perceived from the outside: *"MIT is not warm and fuzzy, but enabling."* Untenured faculty members are especially enthusiastic about the atmosphere at MIT: *"This is a place full of energy and great place to be junior. It never occurred to me to wonder about being a woman."*

Yet, beyond this very positive view, both tenured and untenured groups repeatedly raised several concerns.

The elimination of bias versus perceived preferential treatment of women

Many faculty members commented that bias against women appears during search and hiring procedures. In particular, letters of recommendation for female candidates are often less enthusiastic than for a comparable male candidate: *"The proportion [of a letter] devoted to intellectual brilliance compared to temperament is much less than for men."* Concern was also expressed that during and subsequent to the faculty search, the gender of a candidate directed the outcome: *"I always feel that female candidates are not treated the same. People give male candidates the benefit of the doubt. The demands for women candidates are higher, they are more scrutinized."*

The School of Science Dean is aware of these issues, and search committees are therefore encouraged to read letters of recommendation for women candidates with attention to bias. Faculty commented that this education is necessary: *"I am concerned that the kinds of letters women get are different. You can educate people about how to read other people's letters. It's easier than taking on the world and getting the letters to change."*

However, these procedures can have an unwanted consequence — the perception that standards for hiring and promotion of women faculty are lower than for male faculty — as exemplified by the comment, *"In discussions I hear others saying 'oh, she'll get tenure … because we need to have women.' Makes it sound like the standards of excellence are not the same for men and women."* These perceptions are disquieting to women faculty: *"I am very worried about making too much effort to recruit women, and the perception that women are not as good."* Indeed, this notion led several faculty to question whether they were hired because they were women, undermining their confidence: *"I felt I was invited to interview because I was dazzling, but now I wonder…"*

These findings suggest that it is essential to describe clearly the need to eliminate bias, while at the same time emphasizing that the same high standards of excellence apply to the hiring and promotion of men and women.

The complexity of family issues

Both tenured and untenured faculty emphasized the biological challenges that childbearing present to women faculty: *"The biological constraint of pregnancy and childbirth is gender specific."* Tenure clock extension and parental leave policies at MIT, however, help ameliorate that burden, and many faculty members commended these: *"It's almost impossible to have a career and kids, but the flexible atmosphere at MIT is a true advantage"; "Very positive [with regard to support for children]. Of course they could give us more money! But if I compare our profession with being a downtown lawyer, it is much easier"*; and with regard to other family issues, "*I was given leave to look after a parent. I was grateful for a supportive department."* The advantages and limited amount of on-site daycare were raised many times: *"Daycare on site was crucial to my survival"* and the corollary, *"There are not enough daycare slots."*

There remains some stereotyping, especially among older male faculty, that being a parent and a successful MIT scientist is not possible: *"An older colleague told me I would not get tenure if I was bouncing a kid on my knee at night. There was some outcry about that from younger [male] faculty."* However, several female faculty members wanted to celebrate the flexibility of academia: *"I constantly point out that this is one of the most supportive careers to have a family. You are your own boss, can work where you want, organize your own schedule."*

Counterpoint to the enthusiasm for family-friendly policies was raised by a few faculty without children, one of whom commented that, *"Parenthood is occupying a privileged place in the discussion."* Some of this concern centers around the exclusivity of childcare benefits, and several faculty commented on the increased service burden that may be requested of women without children: *"I am hugely resentful that people feel I can pick up everything because I have no kids."*

One related concern is that childcare issues are perceived as a "woman's" issue and not as a gender-neutral "family" issue. One comment pointed to this very clearly: *"Why does 100% of the conversation about balancing work and family only involve women? At a departmental visiting committee, I was asked in hushed tones, 'How's daycare?' I wanted to say, 'Why did you ask me, I don't have any kids?' "*

A pervasive issue is that of two career couples, where stress associated with finding academic or other positions for both partners is extensive. A continuum of challenges surrounds this issue, where partners may find themselves in different cities or countries, or where one partner may take a lesser position than another in the same region: *"It's the hardest, most complicated thing. Harder than tenure. Will the relationship survive, will the career survive?"* Not only does this issue complicate the lives of faculty, it also limits the pool of faculty MIT can attract: *"I know someone I want to apply here, but she won't because she has a spouse."*

"Expected behavior" and the stereotype of the female role model

Many times, junior and tenured faculty raised the notion of "expected behavior", where the perception that women have soft and sweet personalities colors expectations by colleagues and students. This was illustrated by many comments, which not only laid out the problem, but went on to correct the perception:

"There is a strong responsibility to set the record straight. There is an expectation of niceness, sweetness. It's everywhere. Students, collaborators all make this mistake."

Associated with these expectations is the corollary that assertive behavior may be judged as inappropriately aggressive in a woman, but applauded in a man. Faculty commented that the *"acceptable personality range is narrower for women than men"* and that *"at a retreat, a male colleague commented on a top woman giving a talk 'she's awfully aggressive, isn't she?' ".* These expectations require that women have to consider carefully how to present themselves, neither too aggressive, nor too soft. This is a burden unique to women, and defines the "narrow road" on which professional women have to travel.

A related expectation concerns mentorship by women faculty, where it is assumed that women will be sympathetic mentors because of their gender: *"But I am not patient and understanding. I am busy and ambitious."* Women faculty members are frequently invited to discuss their lives, career choices, and family. There is a strong understanding that this is not true for men. Such invitations make the assumption that women faculty members are more open than men to discussion of personal choices and issues of family and career: *"I am uncomfortable on work/life balance panels. There is an expectation that as a female faculty member you will talk about personal issues. But it's perfectly normal for men to keep work and life separate. I would like to do my best by being the best possible scientist rather than by talking about myself... Just being a great scientist is role-modeling."* Nonetheless, many comments indicated that mentorship by female faculty is exceptionally important: *"After a major award, I got over 1,000 emails, and was shocked by how many women wrote the word 'role model' in their note."* The opportunity to mentor is also welcomed: *"Mentoring my students is the most gratifying thing I do."*

However, many faculty are concerned that we do not present the academic profession in its true light, and that young women are discouraged by what they perceive as a tough path: *"I get a lot of women coming for a chat. They say 'you are an exception, I can't be like you.' "*

Burden of service

A very large proportion of the women faculty is concerned about the high level of service each performs within the Institute, and the scientific community. On the one hand, an outcome of the 1999 Report was the welcome inclusion of women on committees: *"If you want your point of view to be heard, you need to be on a committee."* On the other hand, many faculty suggested that since there are relatively few women faculty at MIT, the perceived requirement to include women on all committees is unrealistic: *"The outcome of the [1999] Gender Report was to ensure that women are on committees, but it should be committees that matter*" and *"All of the committees are supposed to have a woman, but there are not enough women to go around. It is crazy."*

The high level of service can be a real deficit to the career paths of some faculty: *"I have felt scientifically sacrificed serving the Institute and the department, and not appreciated"* and *"I have not been supported, to compensate for time spent on committees, because I am a woman. 25–50% of my research time was wasted. MIT should change that."*

Increased service not only takes away from research effort, but also has financial consequences, where women are largely excluded from lucrative consultancies but may be asked to do more service because of the absent men: *"We don't get asked to serve as consultants. Male colleagues make a lot of money."*

Exclusion and respect

While multiple tenured faculty members reported feeling excluded from decision-making within the department and within the field, junior faculty did not generally report this concern. This suggests that exclusion may surface as women become more senior, similar to the findings of the 1999 Report. The department chair is seen as pivotal in the inclusion of women in departmental life: negatively, *"[The] chair of my department only farms out key roles to men,"* while more positively, *"My experience is different. The chair has been very supportive of me."* The department chair is also crucial in directing available resources to women, as exemplified by the quote, *"I have incredible resources available to me. I am amazed by the generosity of the [department] chair,"* although there were some concerns that women did not ask for resources as frequently as men, and did not have the same level of support.

Embedded in the notion of exclusion, is the feeling that women faculty are less respected: *"The senior [male] faculty in my department split into three groups: (1) those with no respect for women; (2) those that think they are inclusive; and (3) those that get it. Things are changing."* Women have also experienced women being critical of them: *"All established scientists, even women, can devalue women."*

Some junior faculty members reported feeling poorly respected when arriving at MIT, although this feeling often dissipates with time, as the following comment suggests: *"I feel that the level of respect I get as a female faculty member started off being lower than a man. After six months there was no difference, but initially, there was a marked difference."* Other junior faculty cited longer-term issues with respect by students or postdoctoral scholars: *"Students come to my office and ask where the Professor is."* Another commented, *"I will say something and my postdocs will go and ask a male faculty member's opinion. I try to laugh it off, but wonder why they joined my lab if they were not going to take my advice."* These remarks highlight particular challenges faced by junior women faculty, that add to the effort of getting an outstanding research program in place.

Faculty spoke of strikingly diverse experiences regarding inclusion in their specific fields. Some women cited exclusion: *"The field is brutal and sexist. You talk to senior colleagues and they want to talk about anything but science – life, how you look…"* Other faculty reported, however, that things seem to be improving: *"It's getting better. I hardly saw any women at all in my field until recently."* In addition, association with MIT helps, as the following comment indicates: *"I feel like I am taken seriously here and outside, because I am at MIT."* Indeed, a subset of faculty suggested that it can be helpful to be a woman in a field: *"I have definitely found it to be advantageous to be a woman and get speaking slots."*

Experience of being mentored

Junior faculty frequently discussed the importance of their mentoring experiences. Most feel a necessity to be proactive in finding mentors, and that assigned mentors may not be useful. It was thought that these issues are related to the challenges of junior faculty in general, and not specifically to women. On the one hand, there is a positive view of mentoring: *"I have good mentors, but they are not assigned. I have people whose offices I can burst into and be welcomed."* This is balanced, however, by a sense of having to find one's own pathway: *"I was told I would have to climb my own mountain. That is true. People want to help, but there is isolation."* While these mentoring concerns may not be gender-specific, several junior faculty members commented that having women mentor other women is useful: *"This is the first time I have a large number of successful female professors to look up to. It is profound to have senior women in leadership roles."*

4. Recommendations to Ensure Equity

A series of potential action items was identified to improve representation and equity of women in the Sciences. These recommendations are relevant to faculty, and in some cases, to students and postdoctoral scholars. Implementation of these recommendations, including increasing transparency and dissemination of information, will help alleviate the continued sense of marginalization that many women faculty experience. For some of the recommendations below, procedures for equity are in place and are effective, but need to be actively maintained, and new faculty need to be made aware of these procedures. The recommendations listed here are appropriate for further consideration beyond this report.

- Oversee the hiring of women faculty, at the level of the Deans and Associate Provost. The action items needed, regarding recruitment of women, include equity of resources, and training search committees to recognize subtle forms of discrimination in reference letters and the interview process. It must be transparent that women hired at MIT are exceptionally accomplished.

- Address the persistent need for childcare slots, increased financial support for childcare, and continuation of tenure clock flexibility. This support is critical, but it also is essential that women faculty members without children are not unduly burdened with administrative tasks.

- Improve mentoring of junior faculty. Many faculty and possibly department heads are unaware that there exist recommendations for effective mentoring procedures, which should continue to be used permanently in all departments. Departments should have a clear mentoring plan in place prior to making new hires.

- Disseminate reference information regarding policies relevant to women, including maternity leaves, family leave (that encompass caring for aging parents, as well as other family members, including children), tenure clock extension and other benefits.

- Continue and improve tracking of faculty salaries and resources for equity. Conduct a study on equity of individual retirement packages.

- Monitor service commitments and ensure that these are fairly distributed, such that women do not carry a greater burden than men.

- Implement more formal mechanisms to deal with gender-based harassment.

- Continue to lead nationally and internationally in recommending solutions to gender bias outside of MIT, in representation at scientific meetings, in publishing, and in funding of research. The women faculty of MIT can advocate for issues (e.g., extensions of student or postdoctoral fellowship support for child bearing) that can build up the pipeline and increase the number of women choosing to enter the academic ladder.

Appendix: Structure of Faculty Discussions in the School of Science

1. Structure

Each group discussion included 4–7 faculty members in the School of Science, and three members of the committee. Each discussion lasted two hours, and faculty members were invited to contact any member of the committee to discuss any issue further. Faculty members were also invited to elect an individual interview, if preferred. One committee member led the discussion while two others took notes. The committee chair was present at all tenured and untenured discussions, to monitor uniformity of format, while the same faculty members led both discussions of senior women.

2. Format

Faculty were asked to discuss their experiences with regard to what it is like to be a faculty member at MIT and a leader in the field, who is a woman. Discussions progressed through topics raised by the faculty present, and were also guided by the discussion leader to include several areas, as framed below:

- As an MIT faculty member, what are your experiences with regard to (1) research, teaching, and service; and (2) career and family? As relevant, how have your experiences have changed over time?
- What are your experiences in your field, as a woman?
- What is your vision of the future, regarding women in science?

3. Confidentiality

Confidentiality considerations were communicated, at the beginning of each meeting, where the leader emphasized that the discussion would be confidential to the extent possible, and that everyone should agree to keep the discussion confidential. It was explained that notes on the meeting will be typed up and passed around only to people who were at the meeting, so that the participants could correct inaccuracies. The notes were to be treated as confidential and participants would not share these with others. A draft of the report was circulated to all faculty members who participated before it became final, so that participants could make further suggestions. For both science and engineering groups, the study was granted a COUHES waiver.

4. Discussion topics

At the beginning of each discussion, each faculty member was invited to raise any issue she felt important. Subsequent to discussion of these points, the discussion leader used a more comprehensive list of topics to guide discussions, and made sure focus on key topics occurred, as much as seemed useful. These topics are listed below.

Research, Teaching, Service

- Have you been treated differently at MIT, because you are a woman? If so, in what ways? Do you think your experience is typical?

- Please comment on the leadership role of women in your department/unit.
- Do you think MIT women faculty serve as positive role models for students and postdoctoral scholars? Please explain.
- Have you been treated differently in your field, because you are a woman? If so, in what ways? Do you think your experience is typical?

Family

- Have issues of career influenced your family decisions? If so, in what ways?
- Have family issues influenced your career? If so, in what ways?

Level-specific questions

- *Untenured women only*
  With regard to your gender, what were your perceptions about MIT during the interview process and have they changed (or not) since you arrived? Please explain.
- *Mid-level tenured women only*
  Has your view of being a woman faculty member at MIT changed relative to your views when you were junior? Please explain.
  What are your experiences locally versus nationally/internationally?
- *Senior women only*
  Has your treatment as a woman faculty member at MIT changed over the years? Please explain. Has treatment of other woman faculty members at MIT changed over the years? Please explain.

Action items

Participants were invited to make recommendations that would ensure gender equity.

D. Report on the Status of Women Faculty in the School of Engineering at MIT, 2011

Faculty Committee

Sallie Chisholm (Civil and Environmental Engineering)

Lorna Gibson (Chair) (Materials Science and Engineering)

Shafi Goldwasser (Electrical Engineering and Computer Science)

Barbara Liskov (Electrical Engineering and Computer Science)

Dava Newman (Aeronautics and Astronautics, and Engineering Systems)

Caroline Ross (Materials Science and Engineering)

Leona Samson (Biological Engineering)

1. Background

Our committee gathered data on the number women faculty, women faculty in administrative positions and major awards received by women faculty in the School of Engineering. We interviewed 54 of the 62 women faculty, including two women who have dual appointments in Health Sciences and Technology and the School of Engineering, either individually or in small groups. We also interviewed the only retired woman faculty member. We begin with a brief discussion of the data and a summary of the findings of the interviews. We then discuss specific issues and make recommendations for the future.

2. Data

The number of women faculty in the School of Engineering has grown from 34 (10% of engineering faculty) in 2001 to 62 (17%) today, a near doubling in a decade. This is a substantial change. Further demographic data, on the number of faculty, number of tenured faculty, and hiring of faculty, are given in Section E.

Since 2001, many more women have had administrative roles at both the School and the Institute levels. Prior to 2001, Martha Gray was the only woman faculty member in the School of Engineering in an administrative role: from 1997–2008 she was co-Director of the Harvard-MIT Division of Health Sciences and Technology. In 2001, Alice Gast was appointed Associate Provost and Vice President for Research (2001–2006) (she is now President of Lehigh University), and Barbara Liskov was appointed Associate Department Head for Computer Science (2001–2004). Lorna Gibson was Associate Provost from 2006–08, and Karen Gleason was Associate Dean for Research from 2008–2010. Women faculty members from the School of Engineering currently in administrative positions are the following: Cindy Barnhart (Associate Dean for Academic Affairs, since 2008; Interim Dean of Engineering, Fall 2010); Mary Boyce (Department Head, Mechanical Engineering, since 2008); Paula Hammond (Executive Officer, Chemical Engineering, since 2008); Barbara Liskov (Associate Provost for Faculty Equity, since 2007); and Christine Ortiz (Dean for Graduate Education, since 2010).

Women faculty members in the School have been recognized by a number of national awards. Of particular note, 6 women faculty are members of the National Academy of Engineering, 2 are members of the National Academy of Science, 1 is a member of the Institute of Medicine, 7 are members of the American Academy of Arts and Sciences, 3 are fellows of the American Association for the Advancement of Science, 1 is a recipient of the A. M. Turing Prize, the top award in Computer Science, and 3 are recipients of the McArthur Fellowship. Three junior women faculty have won Presidential Early Career Award for Scientists and Engineers (PECASE) awards, and 18 have won National Science Foundation Faculty Early Career Development (CAREER) awards. Finally, 4 women have won Sloan Foundation Fellowships and 1 has won a Packard Fellowship.

3. Summary of Findings from the Interviews

The remainder of this report describes what we learned from the interviews. In this discussion we sometimes refer to three categories of women faculty: junior women (who are not yet tenured); mid-career women (who are now tenured but were not tenured at MIT in 1999, when work on the previous study started); and senior women (who were tenured at MIT in 1999).

Among virtually all the women faculty, there is a strong sense of excitement about the intellectual atmosphere at MIT and the wonderful students and colleagues with whom they interact. There is an appreciation for the freedom to do what they want and the resources and opportunities available. Overall, the women faculty feel that being at MIT is terrific for their careers and that being here helps them develop professionally. Women who have been at MIT for a long time reported that they feel that the environment has improved over the years. Compared with 10 years ago, the number of women faculty in the School of Engineering has nearly doubled, the marginalization of women faculty has diminished, and the family policies implemented since then have assisted women faculty with children.

Women faculty also talked about how collegial MIT is. Many women who joined the faculty after 2001 were surprised by this. Before they arrived, they had expected MIT to be unfriendly and competitive. But once they arrived, they found that it did not live up to this stereotype.

Junior faculty commented that they enjoyed their interviews for their faculty positions and thought that the interviews were done in a professional manner. At MIT the interview focused on what the work was and what the interviewee could hope to accomplish as a faculty member here; this contrasted with what they experienced in interviews elsewhere, where quite a bit of time was spent on personal issues.

However, no place is perfect and our interviews uncovered a number of issues, described in the next section. Finally, Section 5 discusses recommendations based on what we learned.

4. Current Issues

Hiring

In response to the earlier report, MIT has put in place hiring policies designed to identify excellent women candidates for faculty positions. Many women expressed concern about affirmative action policies but most think that on balance it is better to have such a policy than not. The policy is particularly supported by the more senior women, who believe that if we do not continue to make active efforts to identify appropriate women candidates for faculty positions, the numbers will decline.

One impact of the policies is that they sometimes caused new hires to wonder about the role their gender played in being hired and if they were good enough to be at MIT. Over time, as they looked at their accomplishments, this feeling diminished; also several of them noted that male faculty also feel inadequate initially. Nevertheless, this questioning of their own worth affected their quality of life.

In some cases, the search area was broader than it had been in the past, opening up the search to a larger pool of applicants. Some women faculty who were hired through these broader searches noted that it can then be difficult to get their research started, as they did not fit into their department's central activities. In addition, these women sometimes experienced difficulties with teaching since their background did not match well to the core subjects in the department. These women felt that such hires need help to ensure they are well integrated into the department and have the resources they need to succeed.

A number of the women faculty was hired from within MIT (directly after completing their PhDs or postdoctoral work). These women noted that there was an advantage in knowing their way around the Institute, but that there could also be disadvantages. In some cases their former doctoral advisor distanced him- or herself, reducing collaboration. In other cases the candidate chose to change her research area as a

way of differentiating herself from her advisor; although this worked well, it initially slowed down progress.

Research, Teaching, Service

Many junior women faculty spoke of feeling overwhelmed in their first year or two, but this diminished over time, as their research and teaching became more established. Many talked about the difficulty of setting up their lab, learning how to manage a research group, and obtaining funding. The women faculty who discussed the stress of starting a faculty position, however, recognized that this is not unique to women. Women faculty who had participated in the short course, "Leadership Skills for Engineering Faculty", offered by MIT's Professional Education office (http://web.mit.edu/professional/short-programs/courses/engineering_leadership_skills.html), found it to be very helpful; some women were unaware of this opportunity.

The women faculty members we talked to are, by and large, satisfied with their teaching assignments. Unlike 10 years ago, we heard only a small number of instances of women faculty teaching a number of different subjects over a short time span. One issue that was raised was the need to coordinate teaching assignments of junior faculty holding dual appointments to ensure a reasonable teaching load between the two departments.

Women faculty members are engaged in a wide range of service activities, including important departmental committees. This is in distinct contrast to what we heard 10 years ago, when women faculty complained about being marginalized by their exclusion from influential committees. However, many women spoke of being on too many committees, and having to develop their "no" to be more selective about committees.

Some women commented that they feel that they have less time for consulting than men due to their service commitments to MIT, and that they pay a financial price for their service to the Institute.

The Environment for Female Faculty

For the most part, the women are very happy at MIT: they love their jobs, and feel supported by their departments (e.g., by career development chairs). They are positive about the family policies that have been developed over the last decade, although there was some discussion about how they might be further improved. Some junior women faculty reported difficulties, such as being treated like a graduate student, or being bullied by some senior male faculty. Some male faculty made disparaging remarks about women faculty, or had problems with women faculty taking parental release. The women who experienced this said that they did not feel that these remarks were intentionally made to be offensive, but rather, that there was a lack of appreciation for issues of gender in science and engineering, as well as, in some cases, cultural differences vis a vis the role of women in society.

A few women faculty in the mid-career group think that they were treated well as junior faculty, but the "glow" wears off when they become more senior and progress from being protégés to being equal colleagues.

Senior women, especially the ones who have been at MIT a long time, feel that the environment is much better now, but they spoke of the cumulative effect of past inequities. For example, a single raise to bring a woman faculty member's salary up to what it should be does not compensate for the lost salary over the years when she was underpaid.

Many women faculty believe that they are good role models for students and students had, in fact, told them this. Some talked about being sought after for advice by both men and women students.

Mentoring

Junior faculty members in the School of Engineering are assigned a mentoring committee. This can work well but in some cases, the junior faculty members think they did not get good advice from their committee and wasted time thinking about redirecting their research efforts and then finally deciding not to do so.

Importance of the Department Head

We heard repeatedly, from both junior and senior women faculty, about the importance of the Department Head in ensuring that teaching and committee assignments are fair and that faculty members are treated with respect. Many junior women have trouble saying no, and some also feel it is difficult to say no to the Department Head as he or she has control over their promotion and tenure. Some women in the mid-career group reported difficult interactions with their Department Heads over committee assignments. Some senior women faculty noticed a dramatic decrease or increase in marginalization, depending on the Department Head.

Work/Family Issues

The policies for families that have been implemented over the last 10 years are appreciated, although some women, especially junior women, were unaware of some of them.

The availability and cost of childcare remains a concern, mostly for junior women faculty. The on-campus Stata daycare center is very convenient, but does not have sufficient slots and is expensive. Several junior women suggested that women faculty should have priority for slots in Stata; they noted that women bear most of the burden of childcare in our society, so they are particularly in need of a convenient solution that allows them to work but be close to the child.

Some junior women faculty members think that since women still carry the bulk of childcare, gender-blind family policies give an advantage to male faculty.

All junior women with children have tenure extensions (since they receive these automatically). Many women are concerned about how their male colleagues view this and also about how it would affect letter writers for a promotion case.

Some junior women spoke of their concerns about the quality of schools and the cost of housing in neighborhoods close to MIT. Some senior women have concerns about elder care for aging parents.

The partner or spouse in dual career couples sometimes has difficulty finding suitable employment in the Boston area. Several women faculty have partners or spouses living in another area of the country and over time, some may leave the Institute.

5. Recommendations

As a result of the interviews, we have the following recommendations:

- Improve selection of and educate department heads. The ability to deal appropriately with junior faculty and women faculty should be an important criterion when choosing a new department head, and women should be consulted during the selection process. Training of department heads would be useful, e.g., to understand that women are less likely to refuse an assignment than men are, and to ensure that faculty members hired under broad searches have the resources they need to succeed.

- Ensure fairness of committee assignments. The current attitude that there must be a woman on every committee needs to change, since this places an undue burden on women. We recommend putting in place a system that allows yearly monitoring of teaching, committees, and service for all faculty.

- Prepare mentors. The specific problem that women noted is mentoring committee members who wanted them to change research directions. Mentoring committee members need training to understand what their responsibilities are and what is helpful.

- Reexamine family policies. For example, is gender-neutral best with respect to childcare slots in the Stata center and parental release? In addition, consider providing financial support for childcare.

- Develop ways to help dual-career couples, particularly with searching for jobs.

E. Demographic Data Concerning the Women Faculty

1. The Numbers

The number, and percentage, of women faculty at MIT has increased substantially since the earlier studies. The data, presented in Table 1 and Figure 2, show data for all faculty members for each academic year; while Table 2 and Figure 3 show data for tenured faculty. (An academic year runs from July 1 to June 30, and the count is taken on October 1. For instance, the academic year 2011 count is taken in October 2010.)

Table 1. MIT engineering and science faculty composition, over time.

	Size of Faculty						Percentage of Faculty			
	Engineering			Science			Engineering		Science	
Year	Men	Women	Total	Men	Women	Total	Men	Women	Men	Women
1995	321	24	345	252	22	274	93%	7%	92%	8%
1996	323	27	350	259	23	282	92%	8%	92%	8%
1997	287	30	317	242	23	265	91%	9%	91%	9%
1998	298	30	328	233	28	261	91%	9%	89%	11%
1999	298	32	330	235	30	265	90%	10%	89%	11%
2000	309	31	340	229	34	263	91%	9%	87%	13%
2001	311	34	345	229	34	263	90%	10%	87%	13%
2002	313	35	348	228	32	260	90%	10%	88%	12%
2003	316	40	356	232	34	266	89%	11%	87%	13%
2004	311	45	356	235	35	270	87%	13%	87%	13%
2005	319	51	370	233	35	268	86%	14%	87%	13%
2006	318	51	369	240	36	276	86%	14%	87%	13%
2007	321	52	373	234	39	273	86%	14%	86%	14%
2008	320	52	372	236	45	281	86%	14%	84%	16%
2009	318	50	368	233	48	281	86%	14%	83%	17%
2010	316	54	370	229	52	281	85%	15%	81%	19%
2011	310	60	370	224	52	276	84%	16%	81%	19%

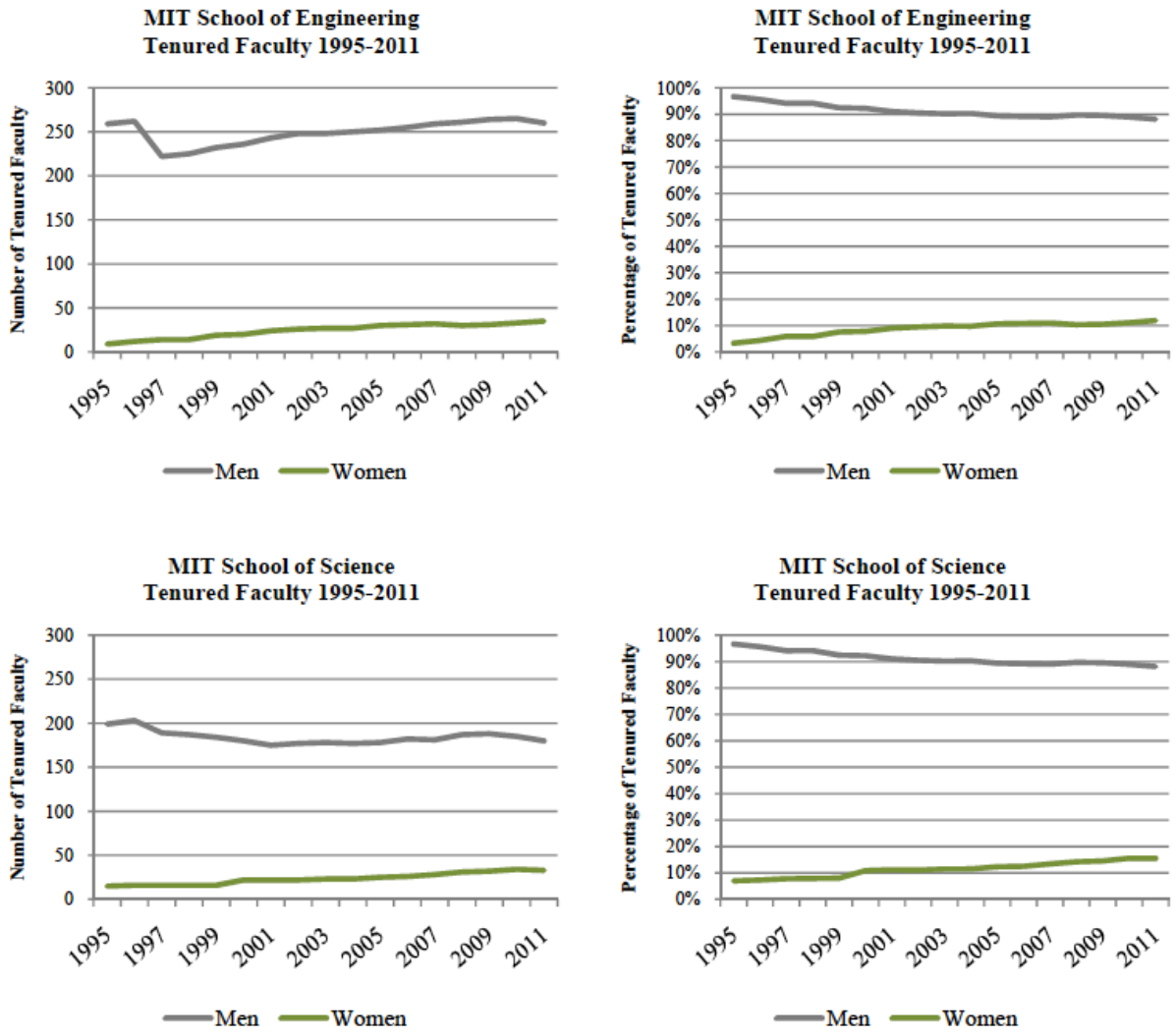
- *Figures are based on faculty census taken in October of each academic year*
- *The number of women faculty in engineering does not include two women who have dual appointments in Engineering and Health Sciences and Technology; one joined the faculty before 1995, the other in 2005*

Figure 2. MIT engineering and science faculty composition, over time.

Table 2. MIT engineering and science tenured faculty composition, over time.

	Size of Tenured Faculty						Percentage of Tenured Faculty			
	Engineering			Science			Engineering		Science	
Year	Men	Women	Total	Men	Women	Total	Men	Women	Men	Women
1995	259	9	268	199	15	214	97%	3%	93%	7%
1996	262	12	274	203	16	219	96%	4%	93%	7%
1997	222	14	236	189	16	205	94%	6%	92%	8%
1998	225	14	239	187	16	203	94%	6%	92%	8%
1999	232	19	251	184	16	200	92%	8%	92%	8%
2000	236	20	256	180	22	202	92%	8%	89%	11%
2001	243	24	267	175	22	197	91%	9%	89%	11%
2002	248	26	274	177	22	199	91%	9%	89%	11%
2003	248	27	275	178	23	201	90%	10%	89%	11%
2004	250	27	277	177	23	200	90%	10%	89%	12%
2005	252	30	282	178	25	203	89%	11%	88%	12%
2006	255	31	286	182	26	208	89%	11%	88%	13%
2007	259	32	291	181	28	209	89%	11%	87%	13%
2008	261	30	291	187	31	218	90%	10%	86%	14%
2009	264	31	295	188	32	220	89%	11%	85%	15%
2010	265	33	298	185	34	219	89%	11%	84%	16%
2011	260	35	295	180	33	213	88%	12%	85%	15%

Figure 3. MIT engineering and science tenured faculty composition, over time.



2. Hiring

The number of new faculty who joined MIT in each academic year is shown in Table 3. The data show that although there is variability from one year to the next, the number of women faculty hires has been increasing. Table 3 distinguishes between those who joined the faculty as assistant professors and the "others" - those who joined at a higher rank. Many of the faculty in the "other" category joined MIT with tenure.

Table 3. MIT engineering and science faculty hires over time.

	Number Hired					
Year	Male Asst	Male Other	Female Asst	Female Other	Total Asst	Total Other
Engineering						
1995	12	3	3	0	15	3
1996	9	2	2	0	11	2
1997	11	1	2	0	13	1
1998	9	5	2	0	11	5
1999	11	5	0	1	11	6
2000	8	2	2	2	10	4
2001	8	5	0	1	8	6
2002	11	4	2	1	13	5
2003	12	1	8	1	20	2
2004	8	0	6	2	14	2
2005	10	1	2	0	12	1
2006	5	1	1	0	6	1
2007	6	2	2	0	8	2
2008	8	1	4	0	12	1
2009	12	1	0	0	12	1
2010	6	1	9	1	15	2
2011	4	1	1	0	5	1
Total	150	36	46	9	196	45
Percent of Total Hires	62%	15%	19%	4%	81%	19%
Percent of Total Hires for Gender	81%	19%	84%	16%		
Science						
1995	9	1	0	0	9	1
1996	7	2	0	1	7	3
1997	5	2	2	1	7	3
1998	6	1	4	1	10	2
1999	10	1	3	0	13	1
2000	12	1	1	2	13	3
2001	8	2	1	0	9	2
2002	9	1	3	1	12	2
2003	11	2	1	1	12	3
2004	10	2	2	0	12	2
2005	2	2	2	1	4	3
2006	11	3	1	1	12	4
2007	5	0	3	3	8	3
2008	10	4	4	0	14	4
2009	4	2	3	1	7	3
2010	6	1	2	0	8	1
2011	4	2	1	0	5	2
Total	129	29	33	13	162	42
Percent of Total Hires	63%	14%	16%	6%	79%	21%
Percent of Total Hires for Gender	82%	18%	72%	28%		

Acknowledgements

Most importantly, we extend gratitude and respect to the many faculty members who participated in these studies. Having the opportunity to speak with you about your experiences was a privilege, and we thank you for the time and thought you brought to the interviews. We thank Professor Lotte Bailyn for helpful discussions, to the Deans of Science (Marc Kastner) and Engineering (Subra Suresh, Cynthia Barnhart, and Ian Waitz) and to Professor Edmund Bertschinger for support. We are grateful for the assistance of Lydia Snover, Scott Barge and Sonia Liou in assembling the demographic data. Thanks to Elaina Burke, Maryann Czerepak, Heather Ferguson, Sheila Marian, Thomas Pixton, Leslie Ann Roldan, Donna Savicki and Heather Williams for data collation, organizational and editorial assistance.

A Report on the Status of Women Faculty in the Schools of Science and Engineering at MIT, 2011

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