Reports of the Committees on the Status of Women Faculty

March 2002

MIT Massachusetts Institute of Technology

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Massachusetts Institute of Technology

Overview

Reports of the Committees on the
Status of Women Faculty

March 2002
Massachusetts Institute of Technology

The Status of Women Faculty at MIT:

An Overview of Reports from the Schools of Architecture and Planning; Engineering; Humanities, Arts, and Social Sciences; and the Sloan School of Management

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Lorna Gibson
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for the Council on Faculty Diversity

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Abstract

A study completed several years ago in the School of Science found that tenured women faculty often experienced marginalization, and with it, inequities in terms of resources for research and compensation. Inequities can be difficult to detect in the absence of a systematic study. To ensure the equitable treatment of women faculty, Provost Bob Brown asked that studies similar to that in the School of Science be performed in the other Schools of MIT. Committees on the Status of Women Faculty, appointed by the Deans, analyzed data and conducted interviews, and prepared reports on their findings. Edited versions of these Reports follow this overview. Strikingly, the studies reveal that the issues that can negatively impact the professional lives of women faculty are similar in different Schools and similar to those identified in Science. They include marginalization, which can sometimes be accompanied by inequities; the small number of women faculty in many departments; and the greater difficulty of balancing family and work for women faculty. Despite generic similarities, specific manifestations of these problems differ among Schools, and even in different departments within a School. Identification of the specific concerns of women faculty has led to prompt corrective actions. It has also led to new policies to facilitate institutional change to prevent such problems from arising in the future. The collaboration of tenured women faculty with the higher administration has substantially improved the professional lives of many women faculty. If sustained, this interaction should ultimately impact the continued under-representation of women, particularly in many fields of science and engineering. Similar efforts may also help to address the almost complete absence of women of color from the MIT faculty.

Introduction

In March 1999 an article in the MIT Faculty Newsletter reported the results of a study on the status of women faculty in the School of Science. An important finding was that many tenured women faculty experienced professional marginalization. Often marginalization was accompanied by inequities, with women faculty receiving lower salaries, less space, and fewer resources for their research than male colleagues, and by exclusion from important decision making roles in their departments. The report highlighted the small number of women faculty (15 tenured women vs 197 tenured men in 1994) and the fact that, contrary to popular belief, the percentage of women faculty had remained unchanged for at least 10, and probably 20 years.

University reports can go unheeded and gather dust, but the Report on the Status of Women Faculty in Science was widely quoted in the media and had far reaching consequences, both inside and outside MIT. Within MIT, President Vest set a goal of achieving gender equity in the future, and he commissioned the Provost to ensure that this was the case. Together, with input from women faculty, Provost Brown and President Vest also established a Council on Faculty Diversity to identify fundamental issues underlying marginalization and the continued under-representation of both women and minorities on the faculty, and to try to devise institutional solutions for these problems.

Outside MIT, the Study on the Status of Women faculty in Science resonated widely with professional women. The problems identified in the MIT report proved to be essentially universal for professional women in the US. Further, the problem had frequently been ignored or misunderstood. President Vest held a conference of nine university Presidents to discuss these issues, and the Presidents made a commitment to address gender bias at their own schools.

An important observation from the Science Report was that marginalization and the inequities that result from it can be difficult to identify in individual cases at the department level. Careful study is needed to identify problems since these can differ from field to field, department to department, and even individual to individual. In addition, a mechanism is needed to correct inequities as soon as they are identified.

In light of these findings, Provost Bob Brown chose to establish committees in each of the Schools of MIT to carry out analyses similar to that in Science and to make corrections of inequities when they were documented. The Dean of each School appointed a committee of female and male faculty, and selected a woman faculty chair in consultation with the tenured women in the School. The reports of these Committees have been completed, presented to the Deans and School Councils, to the Academic Council, and to the faculty. Summaries of the reports are published here.

We are very grateful to the Ford Foundation and The Atlantic Philanthropies for their support of these efforts over the past two years.

Findings of the Reports: Generic Issues, Specific Manifestations

Not surprisingly, the Committees found that most female and male faculty fully appreciate the many advantages of a faculty position at MIT, with its access to exceptional students, colleagues, and resources for research. Nonetheless, across many departments and probably in all Schools, the experiences of male and female faculty differ, with women more frequently reporting negative experiences. The most striking finding from the four new reports is that many of the issues that differentially affect the professional lives of women faculty are shared in all five Schools of MIT. This might not have been readily apparent in the absence of these detailed studies.

Generic issues that differentially impact the professional lives of female vs male faculty are: marginalization; isolation resulting from small numbers of women faculty; residual effects of past inequities, particularly around salary and access to resources; and greater family responsibilities. Marginalization accumulates from a series of repeated instances of disadvantage which compound over an academic career.

1. **Specific manifestations of marginalization and the inequities that can arise from it**

Marginalization can take many forms and can occur for complex reasons. Marginalization has cumulative and deleterious effects on a faculty member's productivity. It leads to professional exclusion, a sense of being under-valued, and accumulated inequities from unequal levels of compensation and unequal access to resources. Marginalization and the inequities that accompany it are more likely to occur in Schools and departments with the fewest women faculty.

Examples of marginalization in different Schools

In Engineering, the School with the lowest percentage of women faculty, the report found that exclusion from professional activities, and sometimes near-invisibility of women faculty were common, although not universal issues. For example, women faculty in different departments report being excluded from participation in group grants. And some report not being invited to serve on the PhD thesis committees of the students of male colleagues. While a single incident is inconsequential, repeated over time these exclusions can have important consequences, since some of these interactions generate new ideas for further collaboration, can result in research that leads to group research grants, and can generate outside professional opportunities important to a career in some fields of engineering. Some of us were present the day the Dean of Engineering, Tom Magnanti, learned of these inexplicable, to him incomprehensible exclusions of women faculty. He was almost unable to grasp that this had routinely happened to women whom he himself knew to be highly respected members of their departments. He instantly understood, though, the severely negative professional consequences of this exclusion.

Interestingly, in Science, exclusion from group grants was also identified as part of the pattern of marginalization, but exclusion from PhD committees was not reported. In contrast, space was not reported as an issue for women faculty in Engineering at the present time, but it had been a very significant issue for some women faculty in Science.

In the Sloan School of Management, a startling manifestation of the consequences of marginalization was discovered when interviews with senior women faculty and a matched group of men were independently coded on a number of dimensions of experience. Among 60 possible comparisons there was no single case where the woman reported a better experience than did her matched male pair. And there were 40 comparisons where the man's reported experience was more positive than that of his matched pair.

In the School of Architecture and Planning, a number of women faculty reported feeling a lack of influence in important decision-making. Some male faculty, on the other hand, reported great influence and inclusion in decision-making. Although women faculty have been appointed as members or chairs of important committees, it appears that some important departmental decisions are not made within these committees, but are made outside of the committee structure.

These examples show the importance of the stories women faculty tell about their experiences in different fields. Only the aggregation of individual stories will point the way to better understanding as well as to concrete ways to improve the situation of faculty women, and undoubtedly of some male faculty as well.

The under-valuing of women and of certain fields of research

As the report from the School of Humanities, Arts, and Social Sciences (SHASS) suggests, not only women, but entire fields can be under-valued in the male-dominated culture of science and engineering. Thus, in humanities at MIT, both female and male faculty in fields without graduate programs often feel under-valued relative to those in the social sciences. These humanistic fields have a higher percentage of women faculty and lower salary scales for both men and women. As one male faculty in Humanities commented, “We’re all women here.” This difference in fields extends to the Sloan School of Management as well, where faculty in areas that are more quantitative are more highly paid and feel more central than those who rely on interpretative analyses of field-based data. The latter include most of the senior women. In Architecture and Planning, too, many women are in fields with lower compensation. The issue also arises in Engineering, where women often work in inter-disciplinary areas and nontraditional niches. This choice may contribute to their isolation and make it easier for men to undervalue their work since there may be no colleagues to collaborate with and few who can comprehensively evaluate them.

Women faculty can often earn less than male colleagues

As expected from national studies conducted over decades, and from the School of Science report, three of the four new Reports document lower salaries for women faculty in the past. In Engineering many of these were corrected some years ago, although a few additional corrections were made by Dean Magnanti in response to the Report. In Sloan, at the time the data were analyzed, women faculty salaries were lower than those of male faculty when controlled for field, rank, and past experience. But Dean Schmalensee has recently taken steps to bring men and women to parity on average. In Architecture some significant disparities were corrected through the work of the

Committee and Dean Mitchell. Only the SHASS Committee failed to find evidence of lower pay for women faculty; however, the committee obtained salary data for only one year, precluding the possibility of detecting past underpayments and corrections.

Department Heads and Deans probably often correct the lower salaries of women faculty, since a common finding in all Schools (except SHASS, see above) is sudden unexplained raises to women faculty, presumably resulting from previous underpayment. Though very important, such jumps do not make up for past unequal contributions to pension benefits. Furthermore, it has been noted that with time, women's salaries often fall behind again.

Now that we better understand the marginalization of women faculty, it is easier to see why the compensation system so frequently results in women faculty earning less than men. Salaries, it seems, are primarily driven by the market and respond most robustly to outside offers. In this market-driven system, therefore, obtaining a high salary requires that women faculty 1) know how the system works, 2) obtain outside offers as frequently as men, 3) be as willing and capable of moving to another location as male colleagues, 4) obtain an equally robust response to an outside offer from their Department Head or Dean. Marginalization and exclusion from knowledge, the lower probability of having a spouse willing to follow you to a new location, and under-valuation in the eyes of those who make offers and those who respond to outside offers, make this long standing problem more comprehensible, indeed, make it almost predictable.

Recently, in the School of Science, it is apparent that women faculty, particularly young single women, have learned to use outside offers, and thus, some now have among the highest salaries in the School. Similarly, women hired from outside in several Schools have high salaries. But for now, the Committees on women faculty are serving as an additional check on salaries, for both men and women. We are gradually coming to see that our compensation system may be both out of date and gendered: it worked well for a man with a movable wife, but is irrelevant for many two-career couples and most women.

As noted above, in some Schools, entire departments and fields are under-valued and all faculty have low salaries. This is not a gender equity issue, although it may reflect the feminization of these fields, particularly within the hard-science, male-dominated culture of MIT.

2. **Small numbers of women faculty and the prospects for increasing the numbers**

Only 16% of MIT faculty are women. This number is expected to be lower overall than many other universities since the percentage of women in science and engineering is lower than in other fields, and since nearly two-thirds of MIT's entire faculty are scientists or engineers. By School, comparable field, or by department, MIT appears to have the same or slightly more women faculty than comparable units of comparable universities.

Once again, in analyzing the numbers of women faculty, careful analysis of data has proven to be critical for identifying specific issues that need to be addressed. For

example, in Engineering, the percentage of women hired in the last 10 years is roughly equal to the percentage of women PhDs produced in the US. However, the Engineering Report documents that most of these hires occurred in half the departments, particularly Civil Engineering, Chemical Engineering, and Material Science and Engineering. In contrast, Electrical Engineering and Mechanical Engineering made virtually no progress in hiring and retaining women over a decade. Between 1990 and 1998 Electrical Engineering hired 28 men and 0 women. This was not for lack of trying. Four offers were made to women, but none accepted. This stunning finding reflects a trend in the School: the acceptance rate for women of job offers to join the Engineering faculty was lower than that of men. Furthermore, engineering will occasionally hire its own best PhDs, but the proportion of male MIT-trained PhDs hired was twice that of MIT-trained women hired. Clearly, only by identifying these very specific issues, department by department, can one begin to address them.

In Architecture and Planning, the proportion of women faculty is high relative to other Schools. But in relation to the much higher proportion of graduate students in the School, they could be doing much better. The School has been very successful in recent years in increasing the numbers of women faculty to very high levels, especially by hiring senior women from without. However, at the same time, there have been problems promoting junior women to tenure from within. These important findings point to areas that require further analysis and understanding, and the need for long term commitment in order to truly impact the number of women over time.

Even in SHASS, the number of women faculty is equal to men in only a few fields of Humanities. While there they are 50-50, in fact in these fields the fraction of women PhDs is even higher. So while the 50-50 mix is highly desirable, even this may be an under-representation of the fraction of trained women PhD's in the pool.

Interestingly, in Science, the number of women faculty has increased by about 50% since its study was conducted. However, most of the increase occurred at that time, and some of it has been eroded by the departure of 4 tenured women. In Science, as opposed to Engineering, the acceptance rate of job offers for men and women over the past decade has been close to equal. The difficulty has been in making offers at a steady pace over a long period of time.

The important information about numbers collected in these reports points to a critical need for a more detailed study of the number of women available in each field, the numbers who apply for faculty positions, the number interviewed, offers made, and acceptance rates over time. This detailed pipeline study is essential for the important next step, which is to determine where the missing women go, and why. As discussed below, the issue of increasing the number of women faculty is being addressed by the Provost, the Deans, and the Council on Faculty Diversity.

Women of color are the most under-represented faculty

Although none of the Reports deal specifically with the issue of the diversity of women faculty this omission in itself reflects a harsh reality: there are almost no women of color on the MIT faculty. Nationally, women of color are all but invisible. Their numbers are hidden in both the numbers of women and in the numbers of under-

represented minorities, but they are almost never seen as a group in their own right. National statistics of top universities show that these women exist in single numbers at best. At a recent conference held at MIT on minority women scientists and engineers in the academy, organized by Professor Evelynn Hammonds (STS, Director, Center for the Study of Diversity in Science, Technology, and Medicine), members of the audience were able to identify – by name – all the women in the top 50 departments of Science and Engineering in the United States! This under-representation applies to African American, Hispanic, and Native American women, and to a non-official minority group of women, those of Asian origin.

3. Family-work issues for women faculty, and increasingly for male faculty

Not surprisingly, women faculty often remark on the greater responsibilities that women shoulder for family care, including care of both children and aging parents. This issue, also central to the findings of the Science Report, is similar for women in all Schools, although the best solutions can be very different depending on the field, stage of career, and nature of the responsibility. Further, as in most universities, many fewer of the women faculty are married or have children. Related to this is the fact that the benefit structure is still geared to a male earner with a family, and some of the needs of women faculty are not being met. In some departments male faculty also cited family-work issues as being of very great concern. This is increasingly true of junior male faculty. These issues are currently being addressed by changes to institutional processes.

Progress for Women Faculty at MIT: Quick Fixes and Long Term Solutions

From these Reports, as from the Science Report, we learned that female faculty can have different, often less positive professional experiences than their male colleagues. Painstaking data gathering by faculty and administrators deep within the institution, including collecting the important stories of female faculty, have helped to make this issue visible and thus make it possible to address it. The MIT administration has made two types of responses to the Science report and to these four new reports as well: quick fixes to specific inequities, and efforts at long term solutions including institutional change.

1. **The Committees on the Status of Women Faculty will continue to monitor equity**

When inequities are documented now by the Committees on women faculty, they are usually promptly addressed by the Deans. The importance of this cannot be over-estimated, since the studies reveal the extreme frustration and discouragement that can result from a feeling that there may be inequities in the system. Furthermore, realizing that inequities will probably continue to arise and impact the productivity and quality of life for women faculty, the Provost and President have requested that the Committees on women faculty remain in place and continue to monitor equity, including annual reviews of primary salary data by Committee chairs. However, as President Vest had noted earlier, important though this is, “fixing inequities is the easy part” of the solution. The more difficult part is to understand the reasons inequities arise, the reasons for marginalization and for the small number of women faculty and to address these.

In recognition of these complex problems, President Vest and Provost Brown, in consultation with tenured women faculty, established a Council on Faculty Diversity in the fall of 2000. This administrative mechanism allows faculty with knowledge of an important issue to work hand in hand with administrators who have both a deep knowledge of institutional process and the power to impact it rapidly. The first Council on Faculty diversity has been Co-Chaired by Provost Bob Brown, Professor Nancy Hopkins (who was Chair of the first Committee on Women Faculty in Science) and Professor Phillip Clay (previously Associate Provost, now Chancellor of MIT. Clay has recently been replaced by Professor Wesley Harris.) In her capacity as Co-Chair of the Council, Professor Hopkins sits on the Academic Council, the highest committee of academic administration at MIT. She is one of two women faculty on the Council, twice the number of women faculty to ever sit there at one time. In addition to Professor Hopkins and Professor Alice Gast (Vice President for Research and Associate Provost), the Council includes four women in positions of administrative leadership (three vice presidents and the director of libraries).

2. **The Council on Faculty Diversity examines institutional process in light of the findings of the Committees on the Status of Women Faculty**

The Reports from all five Committees on women faculty make clear that the small numbers of faculty in many departments, and the greater demands of family are two areas of extreme concern for women faculty. In recognition of this, the Council on Faculty Diversity has specifically addressed these two issues.

Policies to address family-work issues

A Subcommittee on Quality of Life, chaired by Professor Lotte Bailyn (Sloan), with input from faculty across the Institute, developed three new policies for family leaves for the birth or adoption of a child, and for care of a family member or partner. These policies have been approved by the Deans and by the Academic Council and have been put into place in the current year. Their use and effect over time will be monitored by faculty who will report to the Council on Faculty Diversity, thus setting up a monitored experiment.

Small numbers of women faculty: Hiring policies, pipeline

To address the under-representation of women, and also minorities, on the faculty, Provost Brown worked with the Deans to develop guidelines for hiring practices. Each School was asked to develop protocols that could be used by search committees and that would ensure that tenured women and minority faculty play a part in all searches. In addition, some Deans have adopted the policy of reviewing all searches themselves and sending back those in which potential women or minority faculty candidates were not seriously considered. To assist these new programs, Professor Gibson (Chair of the Engineering Committee on women faculty) has prepared a Handbook on Faculty Search Procedures modeled after one developed by Dean of Engineering Denice Denton, U. of Washington. The Council on Faculty Diversity is also in the process of developing new approaches to analyzing and stimulating the pipeline, both for women, including women of color, and for minority males, but this work is still at an early stage.

3. **Women faculty in the administration**

A striking finding from the Science report was that no woman professor had ever been a Department Head, or Center or Lab director in Science in the history of MIT. In fact, there were no women in the administration of either Science or Engineering at the time of the study. This lack of access to knowledge of the system is a serious source of problems. The absence of women from such knowledge and positions of power is also found in some departments of other Schools as the new Reports reveal. Today, six women faculty from Science have roles in the academic administration (see Update from Dean Silbey for the School of Science) including women Heads of two labs in Physics and a Director of the highly prestigious Whitehead Institute, and three women have line positions in the administration in Engineering, while four others have non-line positions with substantial administrative responsibilites. In addition, Professor Terry Knight (Chair of the Committee on women faculty in Architecture) was recently appointed Associate Dean of the School of Architecture and Planning. These appointments have already had a significant impact by dramatically increasing women faculty knowledge of the system, as well as further increasing awareness among male administrators of the problems women faculty can experience. In addition, these women are beginning to impact institutional processes to make them more effective for a diverse faculty.

4. **A collaboration of committed administrators and committed women faculty is responsible for the progress at MIT**

Many women faculty have been amazed by the progress and changes in their own professional lives at MIT as a result of the work described in this Overview and in the Reports that follow. If one were to ask what was the most important factor in change to date, it would have to be the Reports that documented the problems and led to the engagement of administrators in solving them. This could not have occurred without two key components: a significant number of tenured women faculty who worked closely together and were willing to commit an enormous amount of their time to this issue, and a higher administration that, given the knowledge of the problems the women faculty provided, made a long term commitment to work with the women faculty to address the issues. Initially the Dean of Science fixed problems for women faculty on a case by case basis. But today, the Provost, and also Deans, work closely with women faculty within the administration to address these problems on behalf of the institution. This is a profound change, probably the most important to occur for some decades.

5. **Why MIT? "Engineers solve problems"**

When the Science Report was published, many people expressed surprise that analysis of what in the end is really a societal problem should come from a School of science and engineering. However, this may in fact be key to MIT's approach to gender equity. In a conversation with Provost Brown, in which one woman expressed her concerns about whether these complex problems were really fixable, the Provost, an Engineer by profession, seemed quite taken aback. "This is MIT," he replied. "We're engineers. Engineers solve problems." Indeed, it may be the can-do, entrepreneurial,

even upstart confidence of the engineer that explains in part both Vest's and Brown's commitment to this difficult issue. A confident belief that data-gathering, analysis, design of goals and development of metrics can solve most problems may give MIT the courage to try to change societal problems as elusive even as gender bias.

The Future: Will we be monitoring equity forever?

But will it work, this engineers' approach to gender equity? Despite the enormous progress we have made at MIT, there is still a long way to go. While the findings of these reports and the administrative mechanisms they have generated can ensure equity for women faculty, it will remain hard to solve the marginalization of women. Many women faculty are still unlikely to have many female colleagues during their entire professional lives, given the slow rate of faculty turnover and the small numbers of women faculty still being hired in some fields. These women will remain at risk to be marginalized since no matter how many policies one enacts, in the end, consciousness raising of the entire faculty will be needed to solve this problem. But would even that be enough to increase the numbers of women faculty, and solve the family-work issue?

Do we need to change the rules of the game?

As we have seen with salaries and with the numbers of women faculty, once the concrete data are available, committed administrators can make a difference. But lasting equity cannot depend only on the good will of department heads and deans. So, despite the important progress MIT has made, there are still underlying causes that have not been uncovered. There still is very little awareness at MIT, or elsewhere, of the gendered nature of academic rules: how criteria of evaluation, timing expectations, conventions of authorship - to name a few - help men more than women. Nor is there awareness that reputations are constructed, and cumulate from slight advantages that favor men, and slight inequities that disadvantage women. Lasting equity requires rethinking these institutional rules, which evolved for a different demographic group, in order to ensure that they do not systematically disadvantage women, or men in dual career partnerships. MIT has successfully used the experience of the women faculty in the School of Science to ensure that women in all the schools are treated fairly, and that everyone understands the rules. What still needs doing, and what eventually will be necessary in order to achieve lasting gender equity, is to question and rethink the nature of the rules themselves.

Statement by the Provost

Reports of the Committees on the Status of Women Faculty

March 2002
Massachusetts Institute of Technology

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March 8, 2002

To Members of the Faculty:

Dear Colleagues,

In March 1999 the Report on the Status of Women Faculty in the School of Science was published in the Faculty Newsletter. The study found that tenured women experience many forms of marginalization and inequity. In the fall of 1999 I asked the deans of the remaining four schools at MIT to form similar women's committees and to analyze the status of women faculty in their departments. The reports of these committees, as well as the March 1999 report from the School of Science, are contained in this document.

This collection of reports represents the work of over two years of an outstanding group of our colleagues. Their results and recommendations deserve all of our attention.

I believe that creating a diverse faculty to lead our community in education and research must be a core value of MIT. The establishment of the MIT Council on Faculty Diversity, co-chaired by Professors Wesley Harris, Nancy Hopkins, and me, is focused specifically on this goal. The reports on the Status of Women Faculty from each school have been reviewed by the Council on Faculty Diversity, by individual school councils, and by the Academic Council. The processes used by each committee, as well as the academic cultures of individual departments and schools, all differ slightly, but the findings of the committees are startlingly consistent.

Each report documents bias against women faculty. The bias takes many forms, ranging from inequities in compensation and resources, to more subtle forms of marginalization, such as exclusion from substantive decisions at the departmental level. The overall result is the same; women faculty members are not equal participants in our faculty community. A comment is repeated over and over that MIT is a "man's world". This must change.

We must redouble our efforts to change our environment to one where all colleagues are valued without bias according to either gender or race. Increasing the number of women and minority faculty must be a focus of our efforts. With this goal in mind we have restructured our processes for faculty searches to set higher standards for aggressive and thorough canvassing of the applicant pool for women and

minority candidates. With the support of the deans of MIT's five schools, we are creating new processes to identify an increasingly large pool of women and minority candidates.

Initiatives for faculty recruitment must be coupled with faculty compensation and benefits that make a faculty career at MIT a very attractive option. As you know, under the leadership of Professor Lotte Bailyn and the Council on Faculty Diversity, we have recently created or revised a number of policies in order to help our faculty balance their professional and personal lives. We revised our promotion policies to delay the tenure decision by one year for women faculty who bear a child. We also have put in place a policy that would provide paid release from teaching and service for one semester to any faculty member who is the primary caregiver of a new member of a family. Finally, we have established the option for half-time appointments for tenured faculty for a specific duration in the case where the faculty member wishes to give primary care to a family member.

The reports also address the important issue of career advancement for women faculty members within MIT. Many of the issues surrounding the potential for bias and marginalization within the Institute will be resolved only when women faculty are fully represented and integrated throughout our departments and administration. Within the last two years, we have made progress in increasing the number of women in administrative positions in all five of our schools, owing in no small measure to the work of the school deans.

I believe that the efforts and recommendations of the committees that are described in this volume will lead to fundamental change within MIT. We all must work together to make MIT an environment that is inclusive of all, and we owe a debt of gratitude to the colleagues who served on these committees. Their work has already resulted in positive changes that are a sign that MIT is making significant progress toward having a truly diverse faculty that will lead the Institute into the century ahead.

Sincerely,

Robert A. Brown
Provost

Report of the School of Architecture and Planning

Reports of the Committees on the Status of Women Faculty

March 2002
Massachusetts Institute of Technology

Statement from the Dean of the School of Architecture and Planning

The following report describes the current representation and conditions of women on the faculty of the School of Architecture and Planning, and analyzes trends over the last decade.

The report is the outcome of a meticulous study conducted by a committee chaired by Professor Terry Knight. I am extremely grateful to all the members of the committee for tackling this difficult issue with rigor and sensitivity.

The report contains a great deal of interesting and useful detail, but the bottom line is simple and clear. The current situation is unacceptable, and we have some work to do to change it. Despite the considerable efforts that have been made to improve the situation of women faculty in our school, and despite the encouraging progress that has been made in some areas, we still need to achieve some substantial improvements.

The charge of the committee was to examine conditions internally, not to compare conditions at the School of Architecture and Planning with those in similar schools elsewhere. The data that we do have suggest that we are doing reasonably well by comparison with our peers, but we can take small comfort in that. The relevant goal is that of completely eliminating gender inequities in all their forms.

This will require more than good intentions. Successful policies will depend upon a detailed understanding of the structure and magnitude of the problem. This report establishes an excellent empirical foundation for moving forward, it makes some sound recommendations, and I encourage everyone who is concerned with this pressing problem to read it with care.

William J. Mitchell
Dean, School of Architecture and Planning
8 March 2002

REPORT OF THE COMMITTEE ON WOMEN FACULTY IN THE SCHOOL OF ARCHITECTURE AND PLANNING MIT

Women Faculty in the School of Architecture and Planning, 1990-2001: Numbers, Circumstances, and Experiences

March 2002

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Bernard Frieden
Terry Knight (Chair)
Rosalind Picard
Karen R. Polenske
Mitchel Resnick

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Executive Summary

In the spring of 2000, a Committee on Women Faculty was established in the School of Architecture and Planning. It was constituted at the request of the Provost and the Dean of the School of Architecture and Planning, following the release of the pioneering 1999 School of Science study of women faculty and its striking findings. The members of the committee included six senior faculty: two each from the Department of Architecture, the Department of Urban Studies and Planning, and the Program in Media Arts and Sciences. The charge of the committee included the preparation of a report for the Dean to

- assess the status and equitable treatment of women faculty in the School—the assessment to be made through data collection and interviews, and
- make recommendations for improving the status and equitable treatment of women faculty, and increasing the proportion of women faculty in the School.

The committee requested data on tenured and tenure-track faculty from various departmental, School, and Institute sources. The data that were made available to the committee ranged over different time periods, between the academic years 1990 and 2001. This information was supplemented with interviews of all department heads, and with current and former faculty. The committee organized the material it collected into four areas: Faculty Numbers, Salary, Recognition and Resources, and Faculty Experience. The first three areas focus mostly on quantifiable aspects of the "equitable treatment" of women. The forth area focuses on the less easily quantifiable "status" of women faculty. In these four areas, the committee found different gender issues in the three different departments, and some issues that were school-wide.

The committee completed its report in the fall of 2001. This report is a condensed version of the original report. It is important to note that the committee's findings are based on data from a limited period of time. The committee did not attempt to explain the equities or inequities it found. Indeed, the responsibility, sources, or causes for both equities and inequities may be connected to conditions that existed prior to the period studied, and that are difficult to change in a few years. Moreover, the results of actions taken to improve gender equity during the period studied, or more recently in 2002, may not be immediately observable.

Faculty Numbers

The overriding issue, school-wide, was one that was known at the start of the study—the low proportion of women faculty. In 2001, the proportion of women faculty in the School was just under 20%. The committee found that a dozen years earlier, in 1990, the proportion of women faculty was almost identical. After 1990, the proportion of women began to increase, reaching a high of just over 25%, but then declined to previous low levels. By contrast, during the same time period, the proportion of women students in the School increased significantly—at the graduate level from just over 30% to just over 40%, and at the undergraduate level from about 50% to just over 60%.

Since the original study was concluded, the numbers and proportions of women faculty have increased. This year (2002), the proportion of women faculty in the School rose to 24%. Next year, it is projected to increase to about 25%, reaching the highest level of the previous decade. (In one department, the proportion of women faculty will exceed previous high levels.)

The committee identified possible contributing factors to the low numbers and proportions of women faculty in the 1990-2001 period of study. Recruitment, hiring, and tenure patterns in the three departments appeared to be conjointly implicated. The

number of job offers to women, school-wide, was significantly lower than the number of job offers to men in recent years. However, all offers made to women were accepted. This statistic may indicate that departments are making attractive offers to the women candidates that they do locate, or that women perceive the department, School, or Institute as a good place to be. Committee members met with department heads to discuss individual departmental recruitment and hiring policies. These discussions indicated that Institute programs for recruiting women faculty have had varying effectiveness at the department level. "Target-of opportunity" appointments have been used successfully to increase the numbers of women faculty at the senior level. And the Provost's research fund for new women hires has apparently been an attractor in bringing in junior women. But Institute affirmative action search policies have generally not resulted in special efforts to recruit and hire women.

School-wide, the tenure success rate for women has been lower than that for men. But there are considerable differences among departments. In one department, no woman has been tenured for over two decades. In another, the tenure success rate is high and is the same for women and men. The committee did not look at promotion rates of women after tenure—that is, to Full Professor—because only four women were promoted to Full in the history of the School, and only one of these is still on the faculty. Further, there have been no women in the history of the School promoted through all of the ranks from Assistant Professor to Full Professor.

The committee conducted interviews with former junior women faculty who left before their tenure review, to gain some insights into circumstances possibly related to low tenure rates for women in some departments. Former junior men were also interviewed to see which issues might be gender-specific. The interviewees had mixed experiences, but also had important concerns in common. All felt that women with families were disadvantaged with respect to their careers. Mentoring was generally perceived as inadequate. Most women commented on the need to form important alliances with senior faculty in order to succeed. But as young women they found it difficult to establish mentoring relationships with powerful, senior faculty who are mostly men. In general, women reported that difficulties for women arise as a result of the predominantly male culture and cumulative personal experiences and events, not because of any particular individuals or actions.

Salaries

The committee was given access to just one year (academic year 2000) of salary data for tenured and tenure-track faculty. The data did not include faculty administrators (all men at the time) who are given extra compensation. The committee was also given annual salary increases averaged by year, department, and gender, over an 11-year period from 1991 to 2001. In the 2000 salary data, the committee found a marked imbalance between women's and men's salaries, school-wide, in relation to faculty rank. One-third of the women faculty in the School were the lowest salary earners in their rank and department. Almost three-quarters of the women faculty in the School were earning below the midpoint of the salary range in their rank and department, compared to about one-half of the male faculty. Some of the low salaries for women may be related to the generally lower paid fields in which these women work, or to their time in rank. On the other hand, the highest earner in the School was a woman. The average salary increases between 1991 and 2001 were higher overall for women than men in one department. In the other departments, average salary increases were roughly the same for women and men.

Recognition and Resources

The committee had access to very limited information pertaining to faculty recognition and resources. The committee examined data on awards, service, and workspaces—specifically, the Provost's HASS Awards, funded chairs, Institute committee membership, and faculty office, research, and support spaces. Relevant faculty numbers in these areas were extremely small in some cases. Conclusions about gender equity were thus difficult to make, but there were some areas of concern. In recent years, the success rate of women applicants for HASS awards has been significantly lower than that of men applicants, but the average award amount to women was the same or higher than that for men. There were some space inequities in one department, and questions about possible inequities in others. The committee found no inequities in the distribution of junior and senior chairs. No senior women have had permanent, senior chairs, but it appeared that there were no women in the pool of eligible faculty when these chairs became vacant. Still, this emerged as a strong area of concern for women faculty in the faculty interviews.

Faculty Experience

Interviews with women faculty were conducted to gain an understanding of the nature and quality of women faculty lives in their departments, the School, and the Institute. Almost all of the junior and senior women faculty in the School were interviewed, along with a comparable number of male faculty—in total, just over 1/3 of the entire faculty.

Interviewees reported positive aspects of their lives at MIT. For example, many felt that they were moving toward their goals at MIT. Most found their teaching loads manageable and appropriate. Many felt that the climate for women faculty was probably better at MIT than elsewhere. But many interviewees raised issues that hampered their ability to lead fulfilling and productive lives at MIT. Some issues were not gender-specific and were school-wide. These included dissatisfaction with mentoring, and with quality of life issues such as managing work and family responsibilities, and the extreme pace and pressure of work. Important issues specific to women were also raised. Some were voiced very strongly by significant numbers of the women interviewed. Women expressed feelings of exclusion from key departmental decision-making, dissatisfaction with the awarding of senior chairs, and described general difficulties for women in a mostly male environment. Women's perceptions of the climate for women were confirmed by some of the men interviewed.

Recommendations and Next Steps

The committee made detailed recommendations based on its findings. Some of the main recommendations were to

- establish more effective policies for finding and hiring women faculty
- rethink mentoring practices
- increase the influence of women faculty in key decision-making
- appoint women as Department Heads and administrators
- create new funded, permanent chairs for women
- recognize and reduce the stress of managing work and family/personal responsibilities
- correct salary inequities and establish annual salary equity reviews
- create a more productive climate for women faculty

The committee felt that key factors in making long-term, permanent progress in gender equity are awareness and monitoring. As a first step in awareness, the committee recommended that the report be distributed to department heads, and that the main departmental findings be presented and discussed within each of the three departments.

The committee also made recommendations for establishing a permanent school-wide system for reviewing and assessing gender equity on a regular basis.

The report ends with data from the academic year 2001. This academic year, more women have been appointed to the faculty, and offers to women have been made for appointments next year. If the increasing proportions of women graduate students in the School are indicative of a national trend, then there is a growing pool of potential women candidates for faculty positions. Increasing the number of women faculty may help to solve many of the gender problems that the committee identified. Department Heads have also made active efforts in recent years to improve the working environment and influence of women faculty—for example, by correcting low salaries, by appointing women to important committees, and by finding opportunities for recognizing and providing resources for women faculty. The results of these efforts may not be immediately apparent, or observable in the committee's findings. Change does not happen fast, or as expected. And as this report suggests, the responsibility for improvement rests not just with a few departmental and School administrators, but with all members of the academic community, women and men alike.

1 Introduction

In the spring of 2000, a Committee on Women Faculty was constituted at the request of the Dean and Provost. The committee members included six senior faculty: two each from the departments of Architecture, Urban Studies and Planning, and Media Arts and Sciences (technically a program, but henceforth referred to as a department). The charge of the committee was two-fold:

- To prepare a report for the Dean including:

  An assessment of the status and equitable treatment of women faculty in the School—the assessment to be made through data collection and interviews.

  Recommendations for improving the status and equitable treatment of women faculty, and for increasing the proportion of women faculty in the School.

- To decide the mission and constitution of a permanent committee on women faculty for the School.

The committee responded to the first part of the charge with a report that was completed in the fall of 2001. The report was submitted to the Dean and then to the Provost. This report is a condensed version of the original report. Confidential material has been summarized, and appendices have been omitted. We (the committee) will consider the second part of the charge in the coming months.

At the time our committee was formed, centralized and consistent records on our faculty did not exist. Thus, the first task of the committee was to decide what data might be relevant for our study. We considered a diversity of information on our tenured and tenure-track faculty, from numbers of faculty to compensation to academic duties to awards to work space. In discussions with the Assistant Dean, Diane McLaughlin, we narrowed down our initial list of data. The Assistant Dean and the Project Administrator for the Women Faculty Committees, Marsha Orent, then collected data from a variety of department, School, and Institute sources. The data they gathered ranged over different periods of time, between the academic years 1990 and 2001, depending on what information was available. (An academic year is referred to here by the end year of the 12-month period beginning in July of one year and ending in June of the next year.)

The Assistant Dean compiled some data in an extensive historical database of faculty in each department since 1990. The committee also worked with the Assistant Dean to develop another database on current faculty. This database includes detailed information on individual faculty including degrees granted, years of hire, promotion, and administrative positions. The Dean's Office plans to update this database yearly. We supplemented these databases with other data and with interviews of department heads, and current and former faculty.

We organized all of the material that was made available to us into four areas: Faculty Numbers, Salary, Recognition and Resources, and Faculty Experience. This report is organized accordingly. The first three areas focus mostly on quantifiable aspects of the "equitable treatment" of women. The forth area focuses on the less easily quantifiable "status" of women faculty. In these four areas, we found different gender issues in the different departments, and some issues that were school-wide.

The overriding issue school-wide was one we were aware of at the start of our study—the low proportion of women faculty. However, we also found that between 1990 and 2001 the numbers of women faculty began to rise but then declined to previous low levels. We found possible contributing factors to these low levels in recruitment, hiring, and tenure patterns in the three departments. We note, however, that our data end with the academic year 2001. In this academic year, a number of new women faculty have been hired, and the proportions of women faculty in all departments has increased. In two departments, the proportions of women faculty are expected to approach or exceed the highest levels of the previous decade.

School-wide there were salary imbalances, to the disadvantage of women faculty, in the one year of salary data that was made available to us. There were also some inequities in recognition and resources, though these were difficult to judge given the very limited information available to us. There were some significant issues with regard to the experiences of women faculty. Examples included dissatisfaction with mentoring, difficulties managing work and family responsibilities, lack of influence in important departmental decision-making, dissatisfaction with the awarding of funded chairs, and general difficulties for women in a mostly male environment.

In each of the four areas of concern, we made recommendations based on our findings. Our general recommendations, by headings only, are listed in section 7, page 61, together with the page locations where details of the recommendations are given.

We recognize that our findings are based on data from a limited period of time. We did not attempt to explain the equities or inequities we found. Indeed, the responsibility, sources, or causes for both equities and inequities may be connected to conditions that existed prior to the period studied, and that are difficult to change in a few years. Moreover, the results of actions taken to improve gender equity during the period studied, or more recently in 2002, may not be immediately apparent, or observable in our findings.

2 Faculty Numbers

This section of the report examines some trends in the numbers, hirings, and promotions of women faculty (tenured and tenure-track) over a 12-year period, from the academic year 1990 to the academic year 2001.

Within this period, the proportion of women faculty rose from under 20% to just over 25% and then back down to under 20%. Within this small proportion of women, the proportions of junior and senior women reversed over the 12-year period. In 1990, there were roughly twice as many junior women as senior women. In 2001, there were roughly twice as many senior women as junior women. The increase in the number of senior women is the result of recent "target-of-opportunity" appointments of senior women and the promotion to tenure of some junior women. The decline in the number of junior women is attributable in part to the low number of job offers made to women in recent years. It is also attributable in part to low tenure rates of women faculty. Interviews with former junior women indicated that these low tenure rates may, in turn, be attributable to a range of factors—from poor mentoring practices to difficulties balancing family and work demands to general, adverse climates for junior women in predominantly senior male departments.

The negligible increase in the proportion of women faculty over the twelve years is in contrast with a significant, roughly 10% increase in the proportion of women students at both the undergraduate and graduate levels over the same time period.

2.1 Proportions and numbers

In the academic year 2001, there were 74 faculty (tenured and tenure-track) in the School. The three departments had somewhat comparable numbers of faculty: 21 in Media Arts and Sciences (MAS), 28 in Architecture, and 25 in Urban Studies and Planning (DUSP). Twelve years earlier, the School had fewer faculty—62 total. The buildup in faculty occurred primarily in MAS. MAS was established in 1985 and is the youngest of the three departments. MAS had only 12 faculty twelve years prior. Architecture and DUSP each had 25.

The proportions and numbers of women faculty in the School and in each of the departments each year from 1990 to 2001 are shown in Figures 1 through 8. (Faculty who hold joint appointments in different departments are counted only once in their home departments.) The numbers of women faculty school-wide over this period are small—between 10 and 17. Changes in numbers and proportions of women faculty are not dramatic. Even so, they are significant to note. The proportion of women school-wide rose from 18% in 1990, to 26% in the mid-90s, and then back down to 19% in 2001. The increasing proportion of women in the mid-90s corresponds to an increase in numbers of women, and a very slight decrease in the numbers of men. However, the subsequent decline in the proportion of women corresponds to an increase in the numbers of men and almost no change in the numbers of women.

This school trend is an amalgamation of somewhat different trends in each department. In Architecture, the proportion of women peaked (28%) in 1995, but then steadily declined. In DUSP, the proportion of women peaked (27%) in the late 90s, but then dropped back to earlier levels. In MAS, the proportion of women peaked in the early 90s (33%) and then declined. In all three departments, there is roughly the same trend in recent years up until 2001: the number of men has increased but the number of women has stayed more or less the same. This trend is most striking in MAS over the entire 12-year period (see figure 8). In all departments, the relatively constant number of women

in recent years reflects more or less equal numbers of leavings and hirings of women (1 or 2) each year, not the same women each year.

Since the original report was completed, the numbers and proportions of women faculty have increased. In this academic year (2002), the proportion of women faculty in the School increased to 24%. Next year, it is projected to increase to 25%, approaching the highest level of the previous decade. In Architecture, the proportion of women faculty increased to 23% this year. Next year, it is expected to be 26%, approaching the highest level of the previous decade. In DUSP, the proportion of women faculty increased to 28%, exceeding the highest level of the previous decade. It is expected to be the same next year. In MAS, the proportion of women faculty increased to 22%, and is expected to be the same next year.

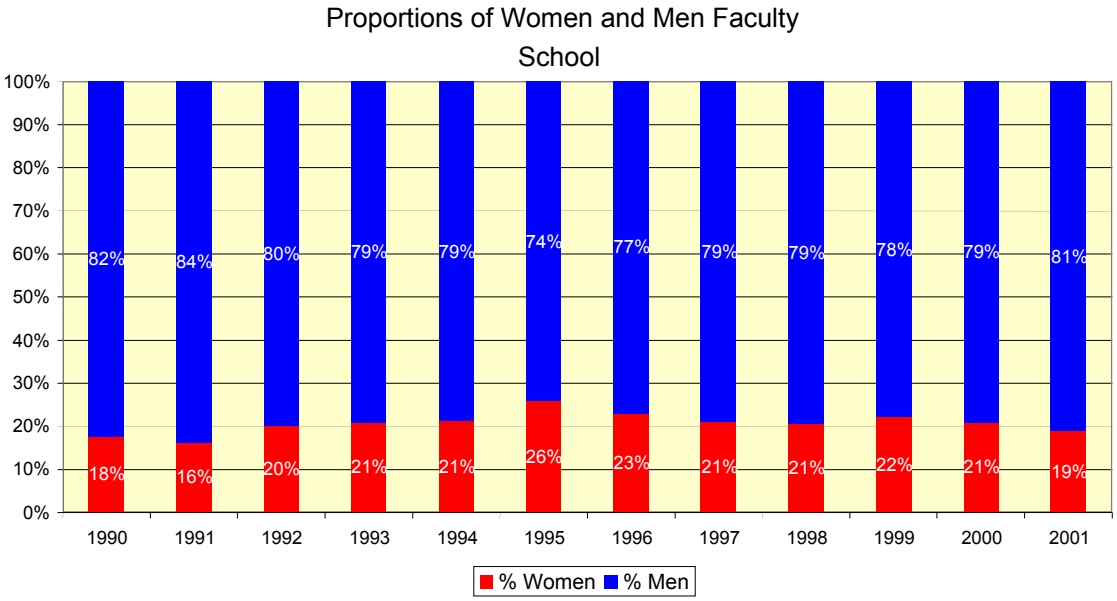


Figure 1

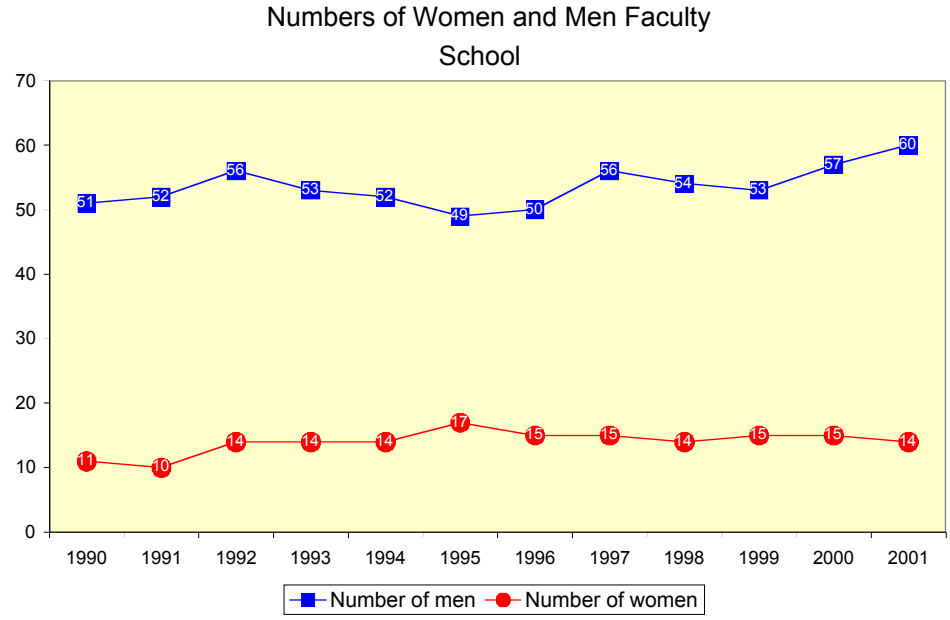


Figure 2

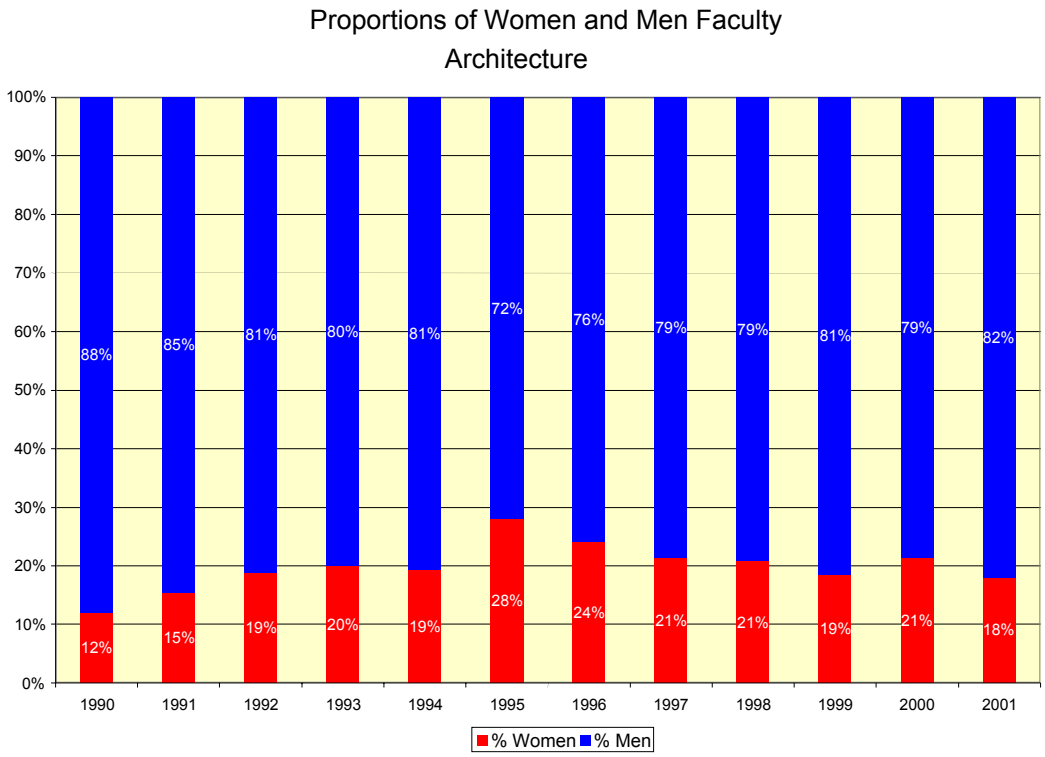
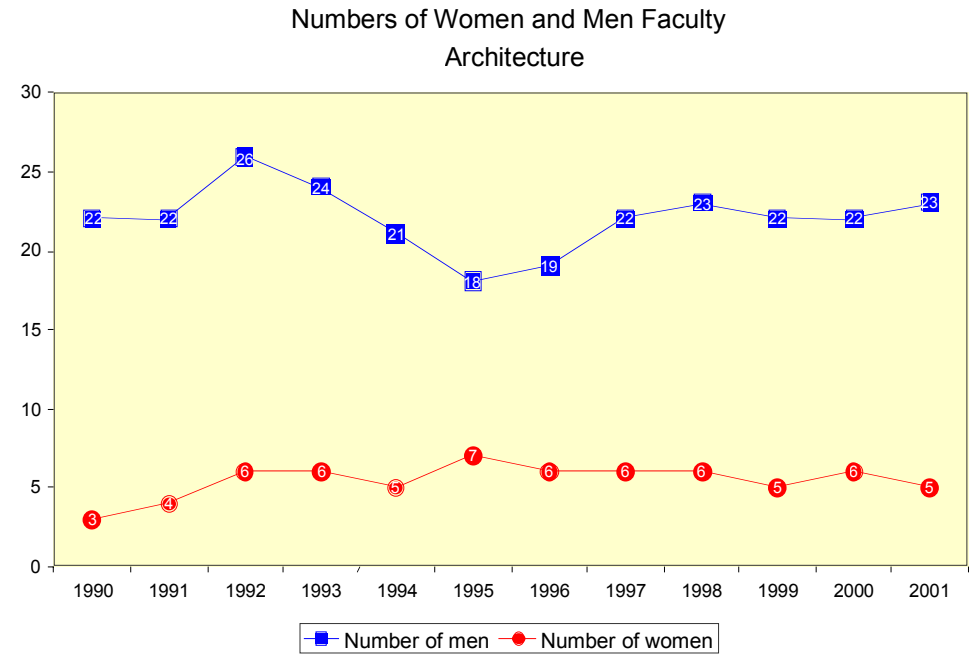


Figure 3



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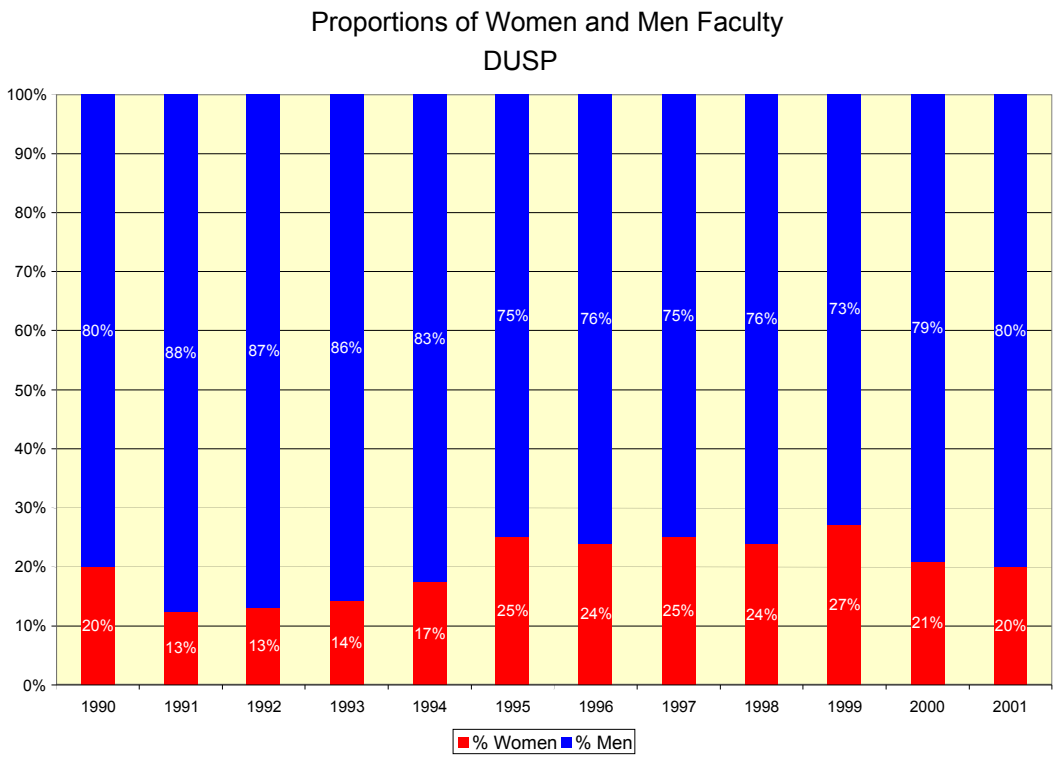

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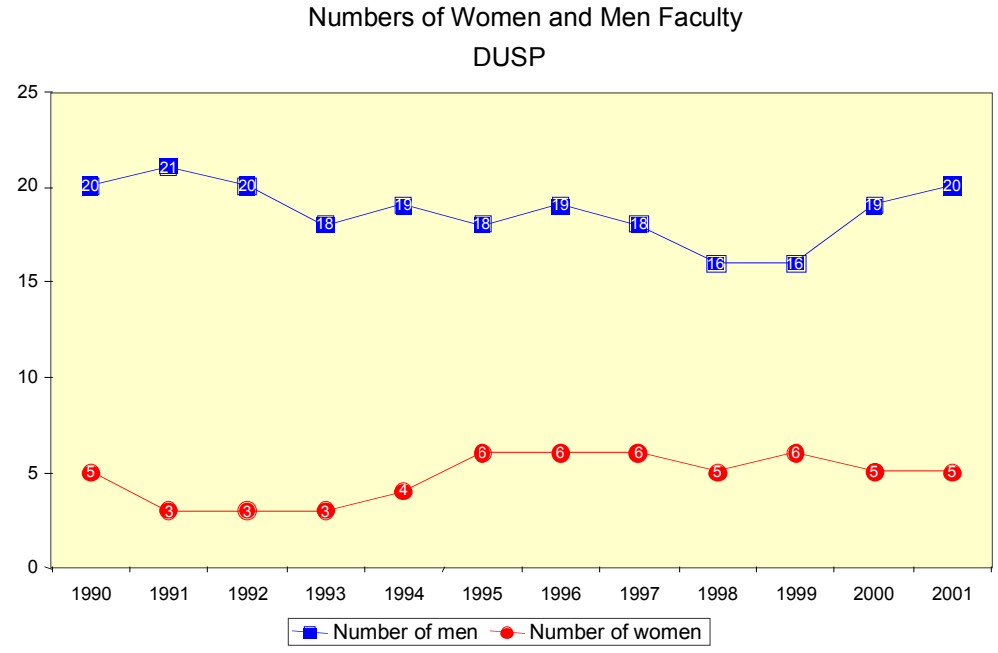

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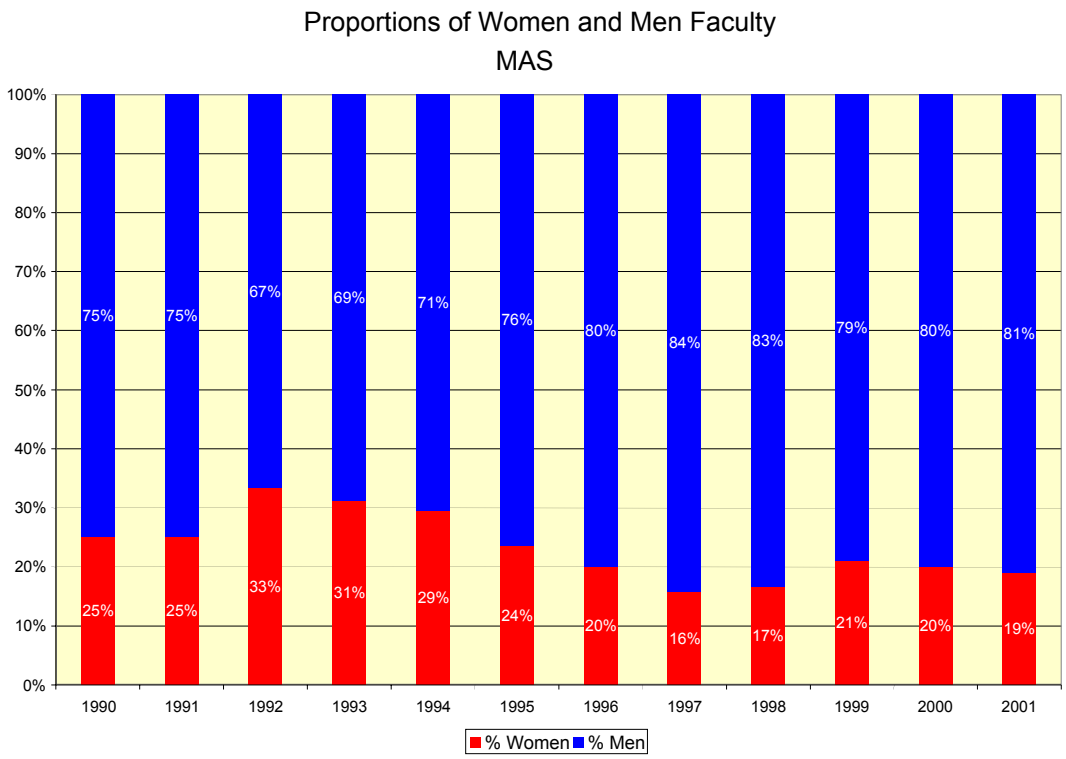

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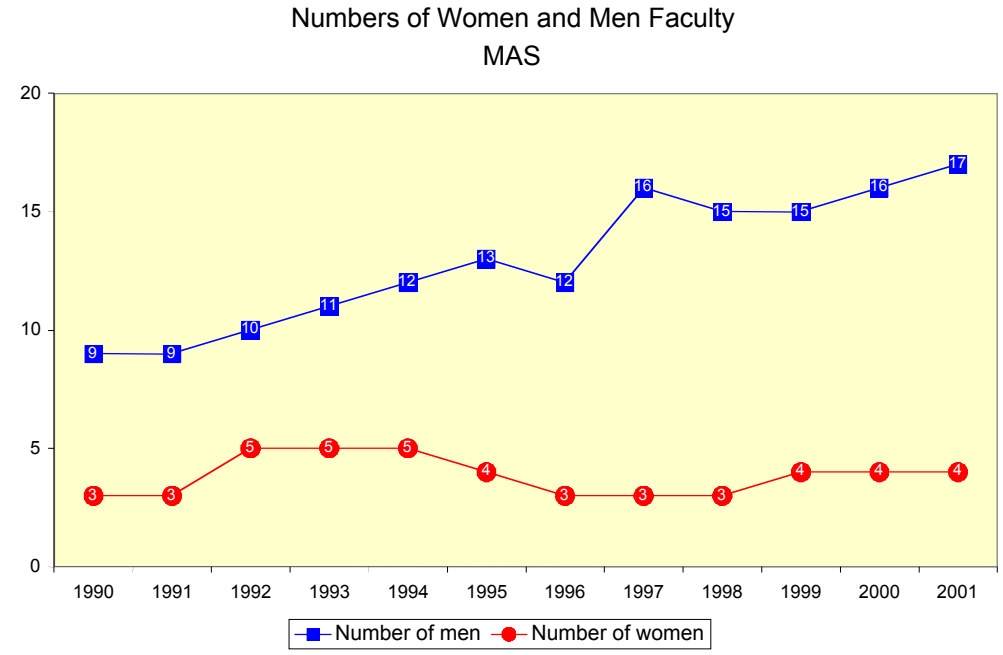


Figure 8

2.2 Rank distribution

Figures 9 through 12 show the distribution of senior (tenured) and junior (untenured) faculty by gender, each year between 1990 and 2001 for the School and for each department. The overall proportion of women is about the same in 1990 and 2001—around 19%. Within this percentage, however, the proportions of junior and senior women reversed over the 12-year period. The proportion of senior women school-wide doubled from 6% to 12%. This reflects the recent promotions of several women from junior to senior, and the appointments of senior women. The proportion of junior women decreased over the 12-year period. The proportion of senior men and the proportion of junior men school-wide remained more or less constant over the 12-year period. Senior men dominated the faculty at around 50% throughout the entire time period.

Architecture and DUSP show the strongest contrasts in the distribution of faculty by rank and by gender. In Architecture, the proportion of senior women almost tripled between 1990 and 2001, from 4% to 11%. However, senior men dominated the faculty over the entire time period. The proportion of senior men rose to its highest level of 61% in 2001. In DUSP, the proportion of senior women doubled between 1990 and 2001, from 8% to 16%. However, senior men made up over 50% of faculty over the entire time period.

As noted earlier (page 11), the numbers of women faculty have increased since 2001. In all three departments, the proportions of women and men faculty in the junior and senior ranks have changed accordingly.

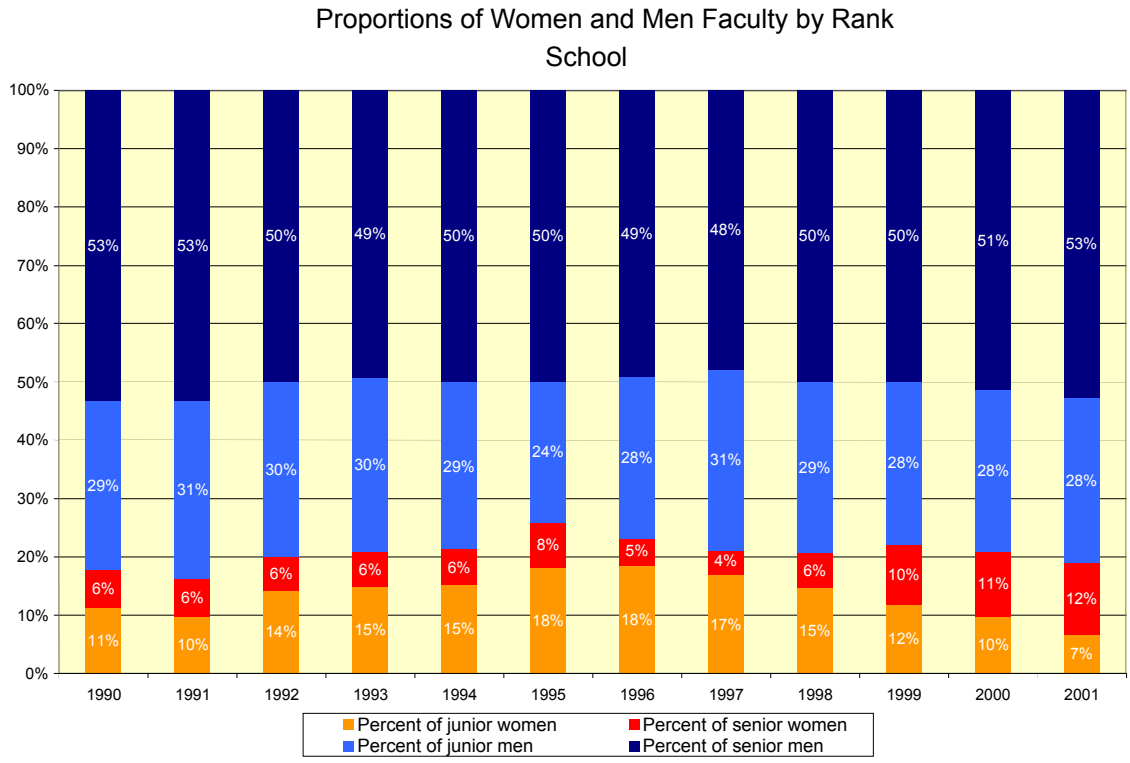
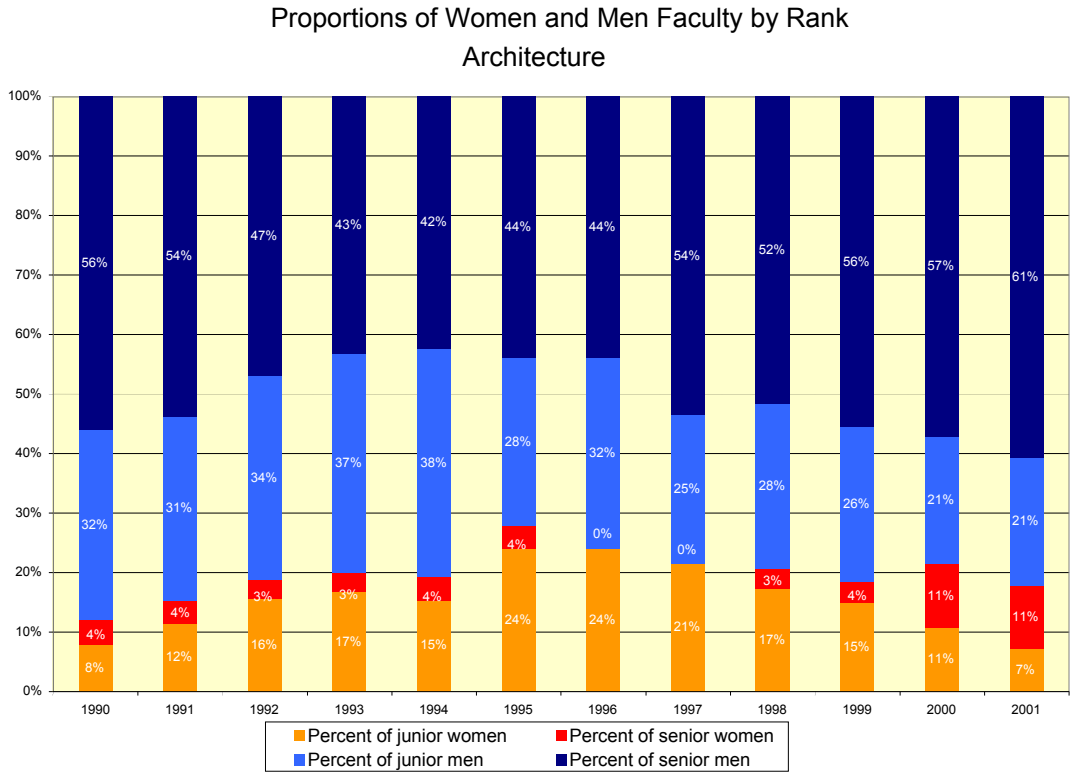


Figure 9



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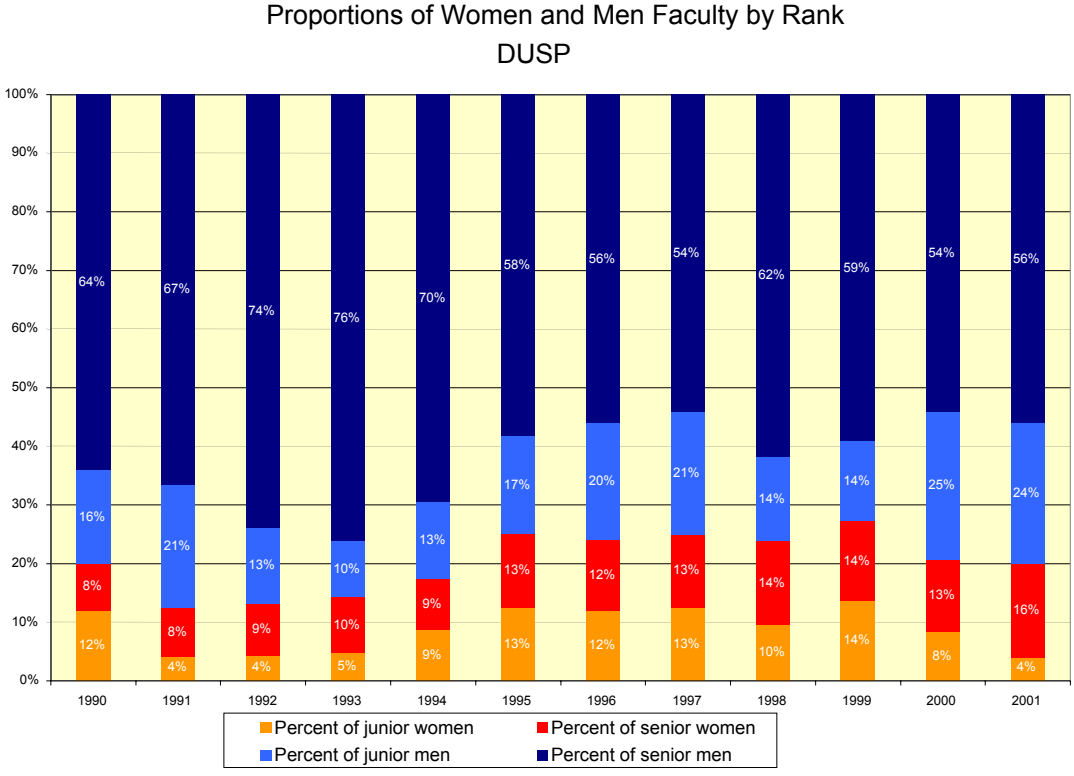


Figure 11

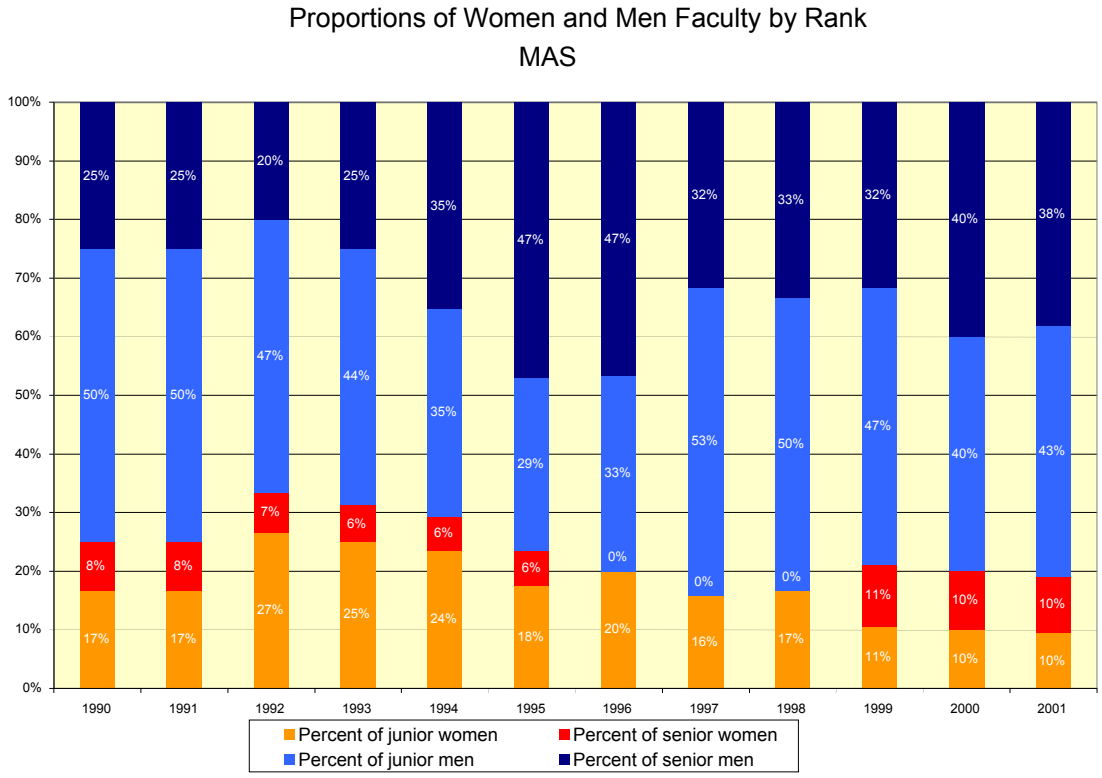


Figure 12

2.3 Pipeline

The pipeline refers to the numbers of people moving through the academic "pipe", from undergraduates to graduates to faculty. Pipeline data for women in the School and in each department between 1990 and 2001 are shown in Figures 13 through 16. (For those unfamiliar with pipeline terminology, the women at each stage in a pipe are generally not the same as those in the previous stage.) The proportion of women declines as women "advance" through the pipeline. The proportion of women students in the School is high. Over the 12-year period, the proportion of women undergraduate majors increased from 50% to over 60%. (This figure does not include MAS which has no undergraduate majors.) At the graduate level, the proportion of women also increased steadily from just over 30% to just over 40%. The most significant increases occurred in Architecture and, to a lesser extent, in DUSP. In MAS (for which we have data only since 1994), the proportion of graduate women also increased but was still low in 2001—25%.

At the faculty level, the proportions of women school-wide are significantly lower than the proportions of women students over the 12-year period. As the proportion of women students increased between 1995 and 2001, the proportion of women faculty decreased. The gap between women faculty and women students widened. However, the proportion of women faculty has risen in 2002 (see page 11), and the gap may now be narrowing. And if the increasing numbers of women graduate students in the School are indicative of a national trend, then there is a growing pool of potential women candidates for faculty positions.

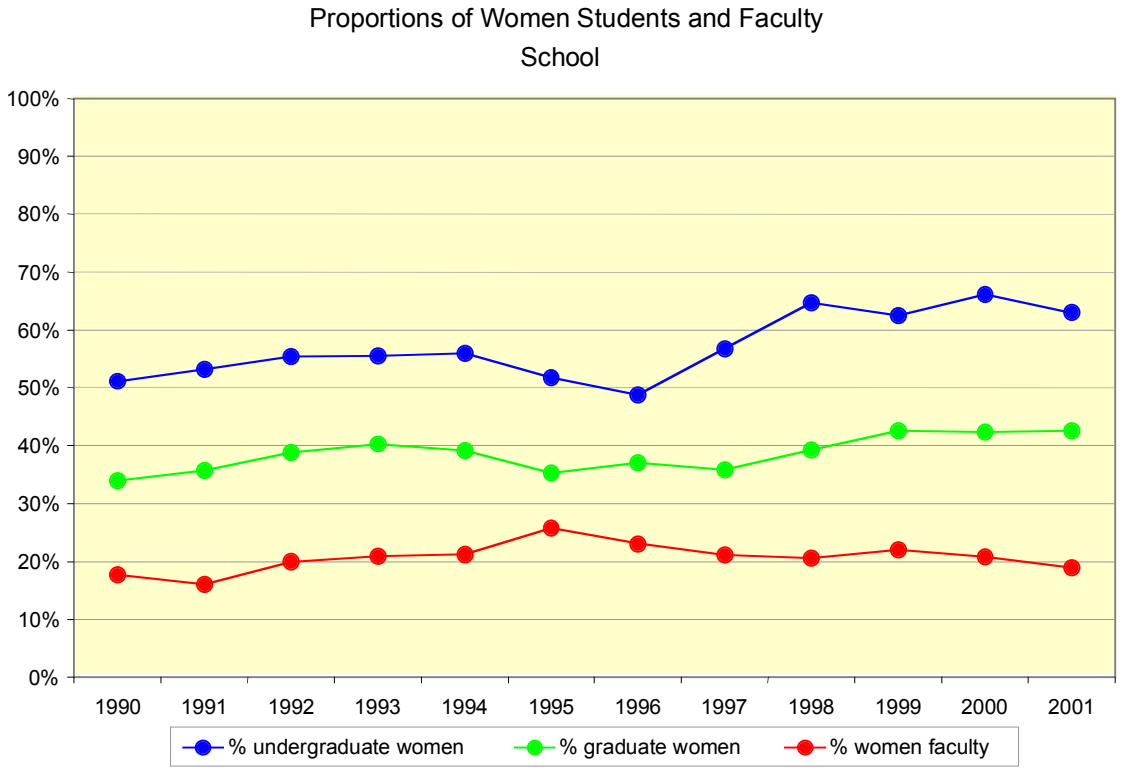


Figure 13

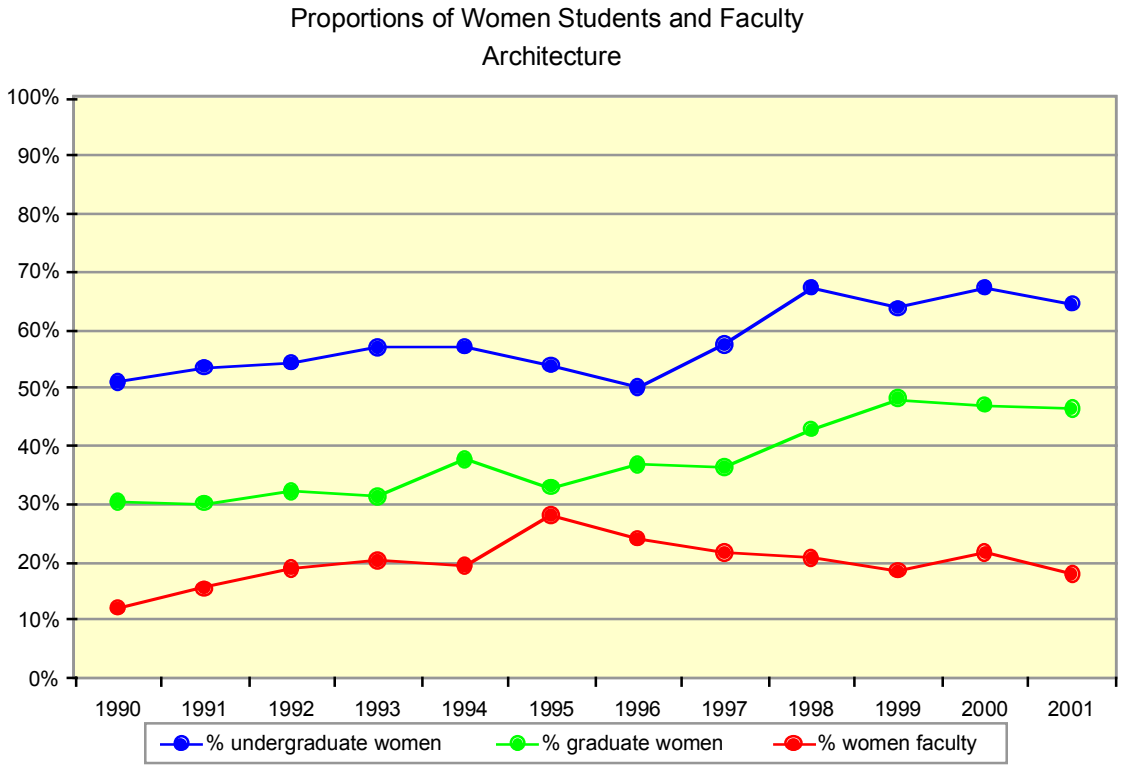
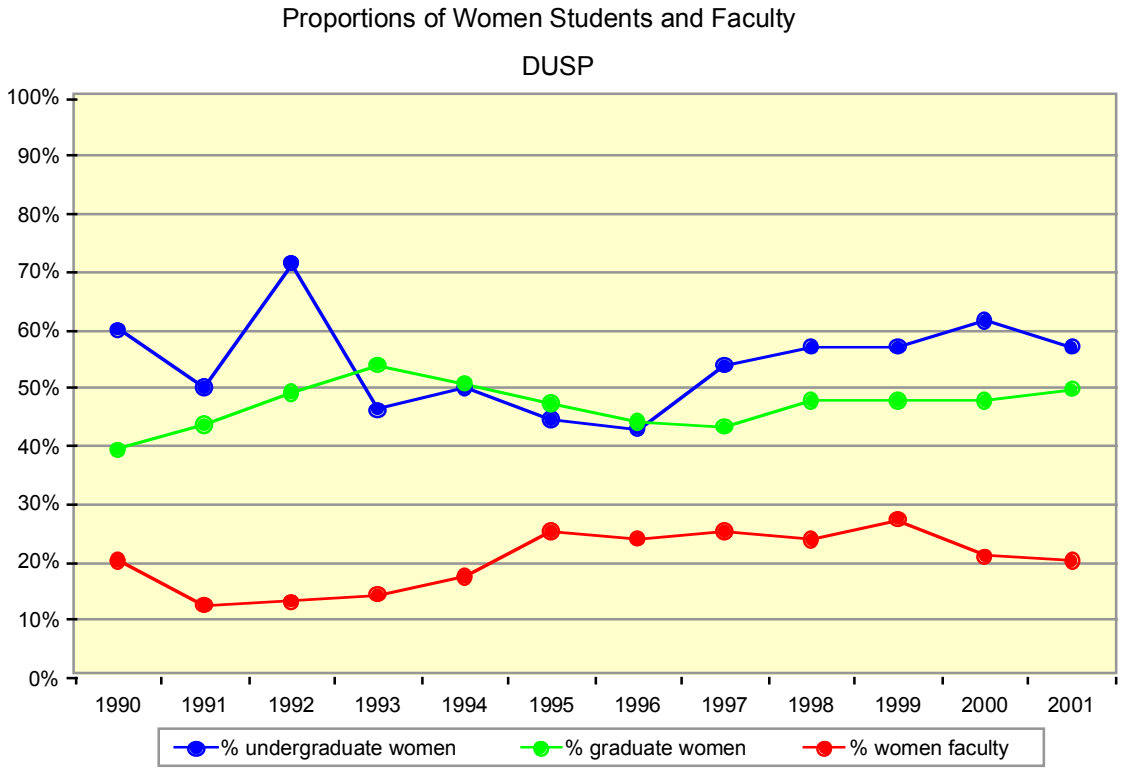


Figure 14



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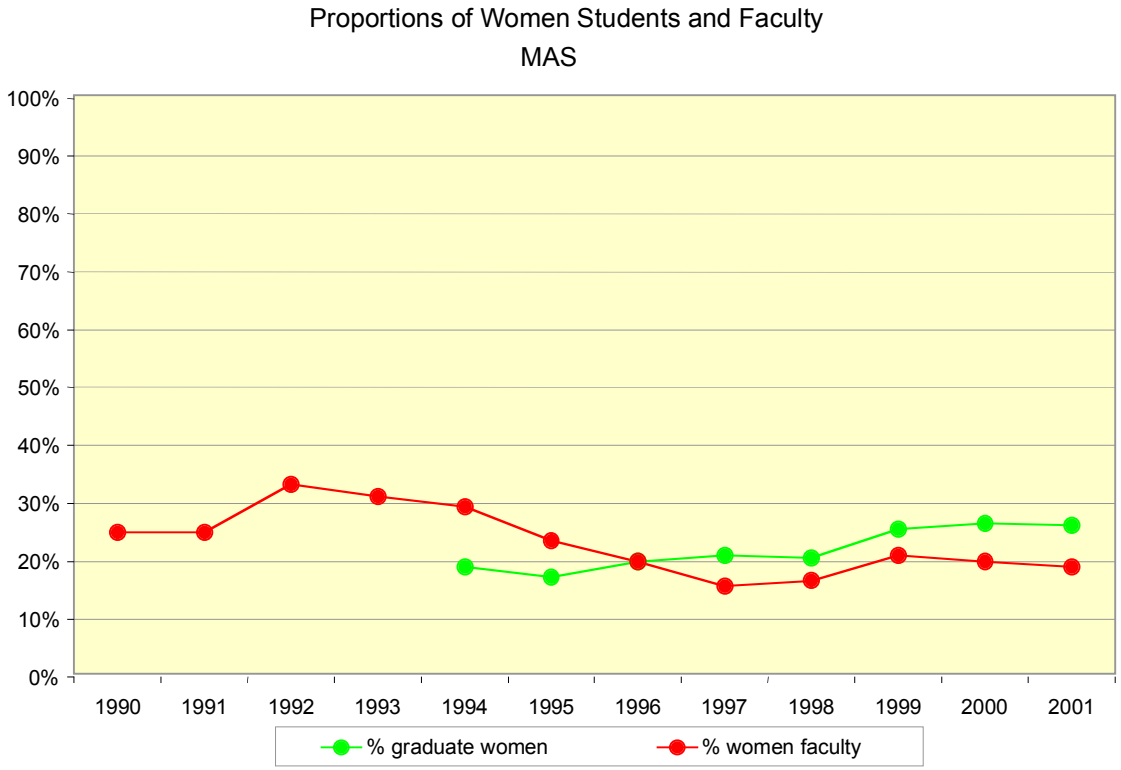


Figure 16

The low numbers and proportions of women faculty in the School reflect patterns of recruitment, hirings, and promotions of women over the past several years.

2.4 Recruitment and Hiring

Recruitment

Figure 17 shows the numbers of job offers made to women and to men school-wide each year from the academic year 1994 to the academic year 2001. (The numbers of offers made by department were not available.) This 8-year period corresponds roughly to the period of decline in the proportion of women faculty in the School.

In this period, the numbers of offers made to women were mostly lower than the numbers of offers made to men. More offers were made to women in only two years. In these two years, the differences between the numbers of offers made to women and the numbers of offers made to men were minimal—offers to women and offers to men differ by just 1. When more offers went to men, the differences are much greater. In two years, no offers were made to women at all.

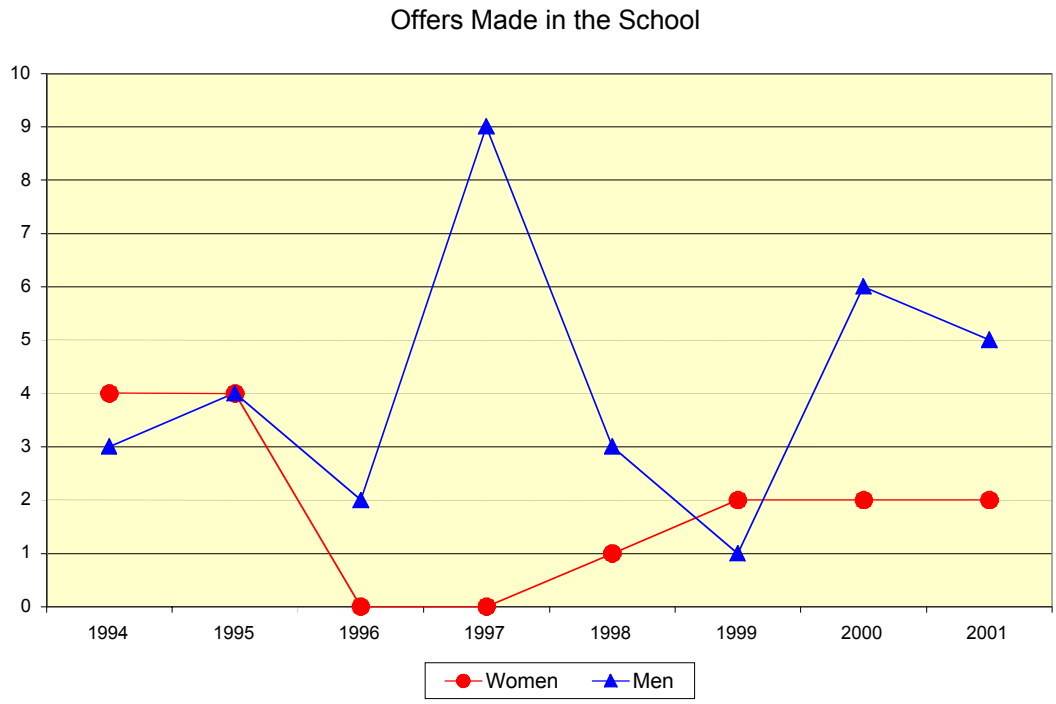


Figure 17

Figures 18 and 19 show the numbers of offer acceptances for women and men in the same time period. Not all offers made to men each year were accepted, but the acceptance rate was high. However, all offers made to women each year were accepted. The School is reaping the maximum benefit of offers made to women. The low numbers of women in the School thus do not appear to be a result of women not wanting to come to the School.

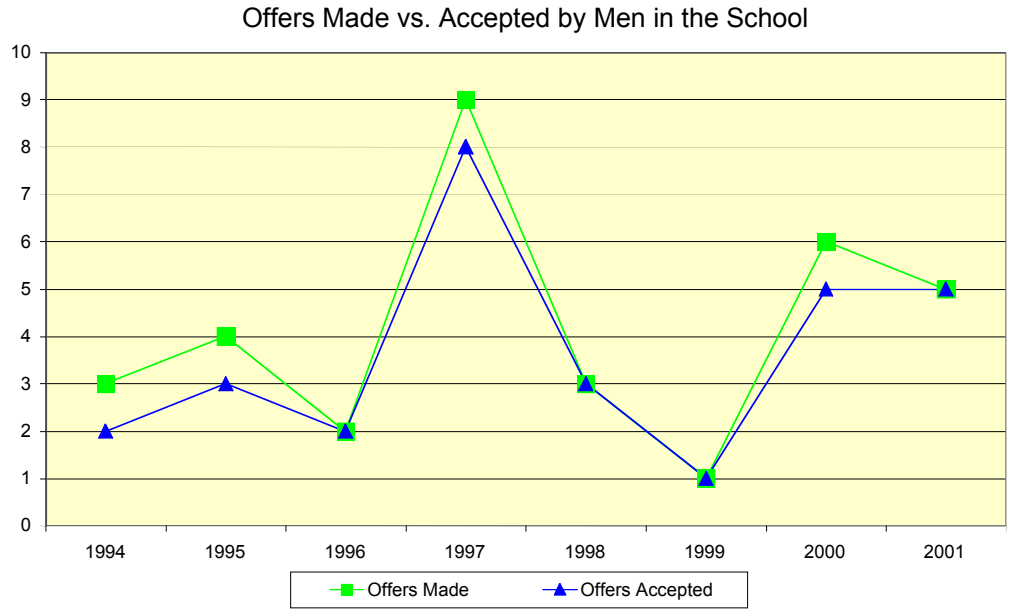


Figure 18

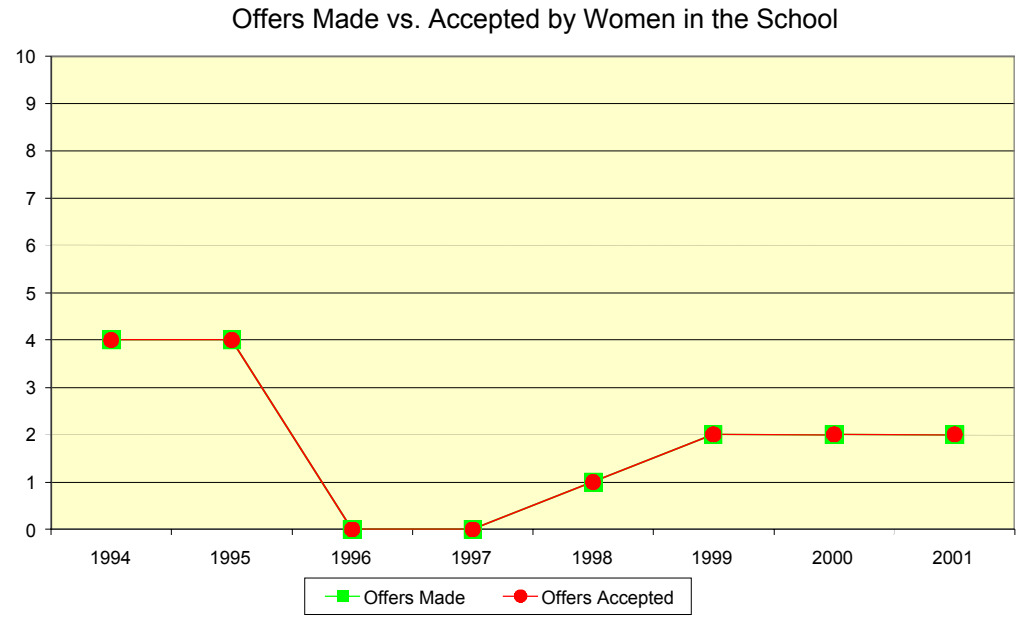
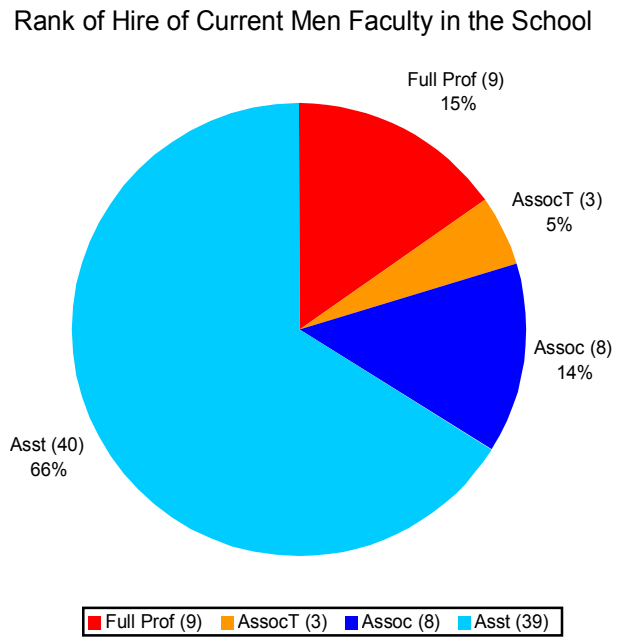


Figure 19

Rank of Hire

Figure 20 shows the ranks at which current women and men faculty (that is, faculty as of the academic year 2001) were hired.



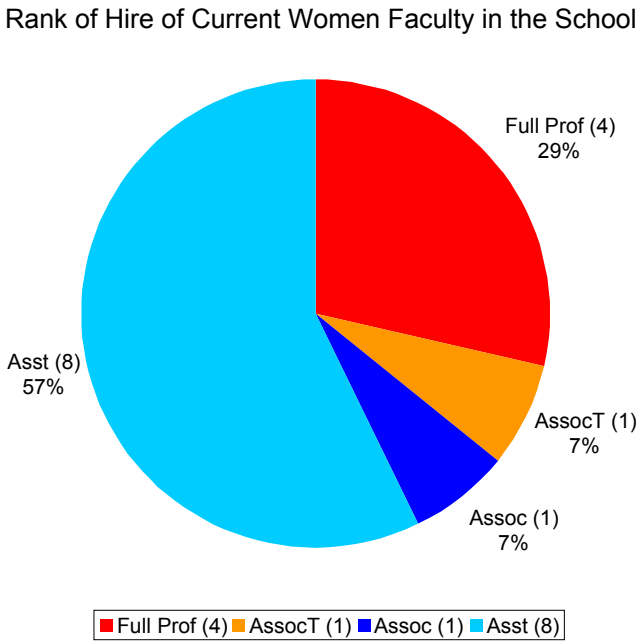


Figure 20

The proportions of women and men hired at the Assistant level are similar. So too are the proportions of women and men hired at the Associate with tenure level. There are greater differences in the proportions of women and men hired at the Associate without tenure level and at the Full level. These differences may have some indirect impact on the numbers of women in the School.

Junior faculty hired at the Associate level may have an increased likelihood of achieving tenure. These faculty have the same eight years to tenure as faculty hired at the Assistant level. However, they begin with more experience and background than faculty hired at the Assistant level. They may be better able than new Assistant professors to begin the kind of work necessary to achieve tenure. Of the eight men hired at the Associate level, five are now tenured. The other three have not yet come up for tenure. The one women hired at the Associate level is now tenured. No new women have been hired at the Associate level. The gender disparity in Associate level hires is most prominent in MAS. In the past 10 years, three of the current male faculty were hired at the Associate level. No women were hired at this level. All of the current women faculty were hired at the assistant level.

It may be useful to track the tenure rates of faculty hired at the Associate level versus the Assistant level. If the tenure rate for the former is higher than that for the latter, then women may be at a disadvantage if they continue to be hired at a lower level than men.

The higher proportion of women hired at the Full Professor level reflects efforts by the School to increase the number of women through "target of opportunity" appointments. These are appointments of outstanding senior women and minorities in faculty slots created especially for them and funded by the Provost. (That is, they are not appointments in positions already open in a department.) These appointments do increase the number of women faculty, but they do not compensate for the low tenure rates of junior women in some departments. Although they have increased the proportion of senior women in the school, the proportion of junior women has dropped at the same time.

Hiring Policies: Department Head Interviews

The Institute has initiated a number of policies to recruit and retain women (and minority) faculty. In 1991, the Provost laid out an aggressive program, with Institute funding, for attracting women faculty. Different initiatives were established:

- A visitors and lecturers fund ($50,000 annually) is available to bring in outstanding women, some of whom might be candidates for faculty positions.
- For departments with less than 25% women faculty, target-of opportunity appointments can be made.
- For departments with less than 25% women faculty, the department will receive $30,000 annually for five years for each open slot filled by a woman. Out of this money, a discretionary allowance of at least $15,000 will go to the woman faculty member each year.
- A 5-year chair, the Ellen Swallow Richards Professorship, will be available to outstanding, new senior women.

The Institute has also established an affirmative action "serious search" policy to motivate the recruitment and hiring of women and minorities. The essence of this policy is that departments must make and document serious efforts to recruit women and minorities for an open position, and if no short-listed woman or minority is hired, reasons must be given.

Two members of the committee met with the Heads of Architecture, DUSP, and MAS to discuss hiring practices and policies. We wanted to gain some insights into how Institute policies are implemented in each department, what departmental hiring practices exist, and how hiring policies might affect the numbers of women in the School.

Visitors fund
Department Heads either did not know about this fund or primarily used other funds to bring in visitors and lecturers. This fund appears to be an under-used resource.

Target-of-opportunity appointments
This program has been used aggressively by Architecture and by DUSP. In 2001, two of the three senior women in Architecture were opportunity appointments, and three of the four senior women in DUSP were opportunity appointments. (This year another opportunity appointment was made in DUSP). No opportunity appointments have been made in MAS because the department has a policy of not hiring at the senior level.

Despite the Architecture and DUSP opportunity appointments, the Heads of these departments expressed some concerns with this type of appointment. Both Heads felt that outstanding women cannot be hired outright. They must be a good fit with the department. This narrows the pool of women. One Head observed that hiring outstanding senior women might jeopardize the promotions of junior women faculty in the same area. In both departments, opportunity appointments at the tenured Associate level are rarely considered. They are perceived as difficult to make. One Head felt that it might be difficult to make a case for a woman to be outstanding at the Associate level. One Head observed that potential candidates at this level probably have been promoted recently elsewhere and might not want to go through the promotion process again. Only one opportunity appointment has been made at the tenured Associate level.

Funds for open position appointments of women
These funds come automatically with the appointment of a woman in an open position. In all three departments, they have been used only for junior appointments. All recent senior appointments have been opportunity appointments. The Department Heads did not feel that this program is a strong incentive to recruit women—excellence is always the main criterion in recruiting. However, the funds do seem to be an incentive for women to accept offers (see section 2.5 Junior Faculty Exit Interviews and section 5.2 Faculty Experience: Findings).

Ellen Swallow Richards Professorship
This chair has been awarded to one senior woman in DUSP. The Architecture Head expressed interest in using this chair, but noted that the emphasis on natural sciences and engineering is a problem. MAS does not hire at the senior level so this chair is irrelevant in hiring women.

Serious search policy
All of the Heads indicated that their departments followed serious search requirements. However, two Heads observed that the effectiveness of the policy—the true seriousness of a search—depends on having committee members who are aggressive in pursuing women (or minorities). Otherwise, there may be no special efforts to recruit women. In other words, it is possible to comply with serious search requirements, without actually making serious efforts. One Head thought that the policy was not really effective, that searches and appointments depend on personal contacts and leads.

Departmental hiring practices
Each of the departments has different hiring practices.

In Architecture, search committees are composed mostly of faculty in the same discipline area as the open position. Positions may be constrained by curricular needs. Assistant Professor appointments are decided by the search committee and the Head. They are not reviewed by the entire tenured faculty. All other appointments are reviewed by the entire tenured faculty.

In DUSP, the search process for any level appointment includes the entire faculty at all stages. Search committees are composed of a range of faculty from different discipline areas. The goal of a search is to find the best person in a broadly defined area unconstrained by curriculum. Candidates are reviewed by all of the tenured faculty. In previous years, there were many "inside"appointments of former students. Because of the dissension this sometimes caused among faculty, this practice has been stopped.

In MAS, the search process is broad and inclusive. Search committees are the entire faculty. In building itself, this relatively new department is looking for the best people in broadly defined areas. In previous years, there have been several "inside" appointments, but this practice has been stopped. Appointments are made only at the junior level so that the faculty are promoted and "grown" within the department.

2.5 Tenure and Promotion

Tenure Rates

The calculation of tenure rates for a given time period is based on the total number of junior faculty that are eligible for tenure review in that time period. The success rate is the percentage of that group that received tenure in the time period. The failure rate is the remaining percentage of the group that either left before a tenure review or were denied tenure. In the following discussion, "tenure rate" refers to tenure success rate unless otherwise noted.

Figures 21 through 24 show the tenure success and failure rates for women and men from 1991 to 2001 by School and by department. The school-wide tenure rate for men (33%) is higher than that for women (22%). However, these rates are amalgams of very different rates in each of the departments.

In Architecture, the tenure rates for women and men are almost equal—27% for men and 25% for women. The tenure rate for women represents the recent tenure of two women in 1999. Before then, the tenure rate for women was 0% going back to 1987 when one woman was tenured (and left immediately after receiving tenure). One of the women recently tenured is the first woman in the history of the department to be tenured in the area of design. The other woman moved to another department after receiving tenure, but still holds a joint appointment with Architecture.

In DUSP, the tenure rate for women is 0%. It has been 0% for 23 years. The tenure rate for men is 33%.

In MAS, the tenure rates for women and men are equal—50%. The tenure rate for women represents the tenure of two women in 1996.

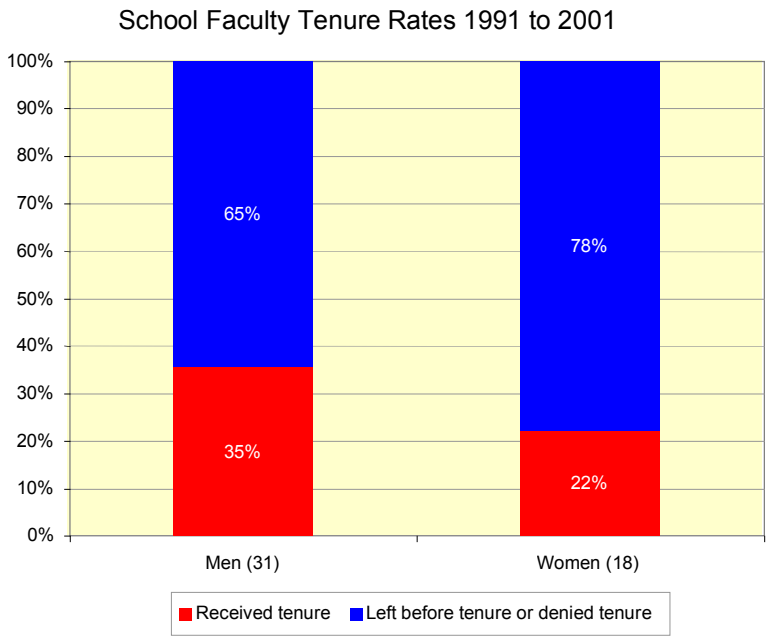


Figure 21

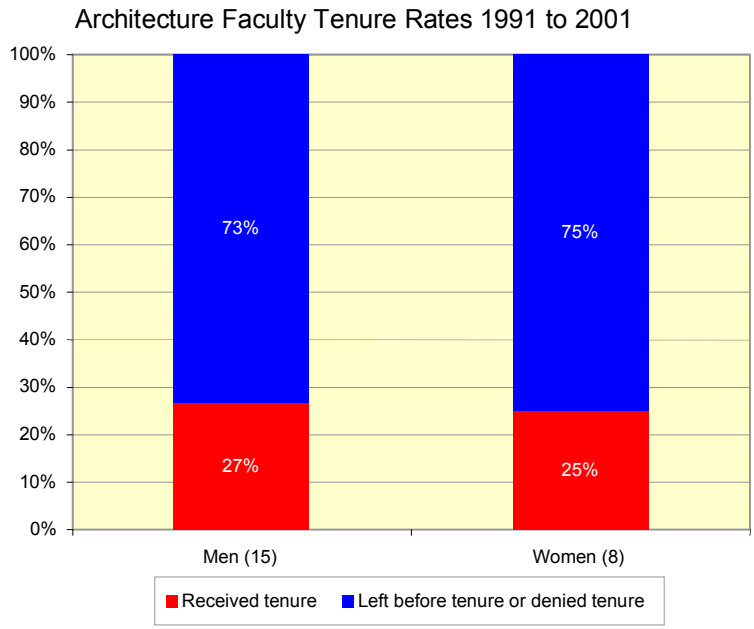


Figure 22

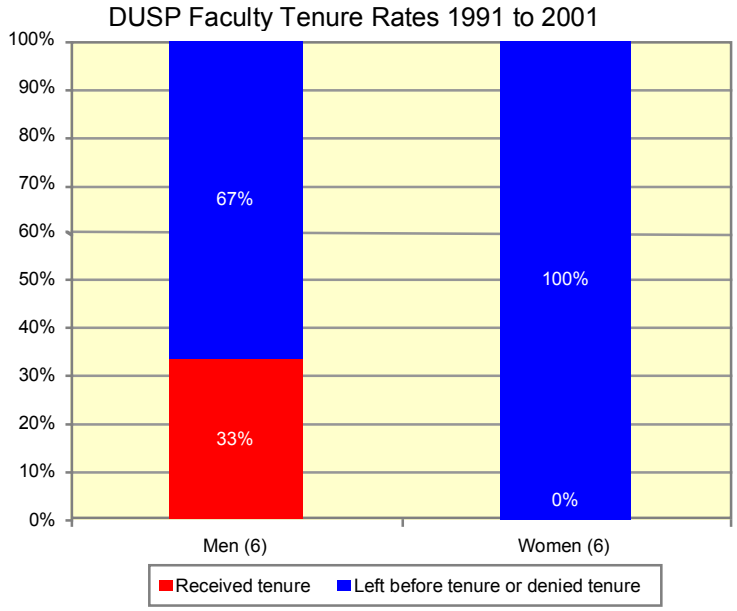


Figure 23

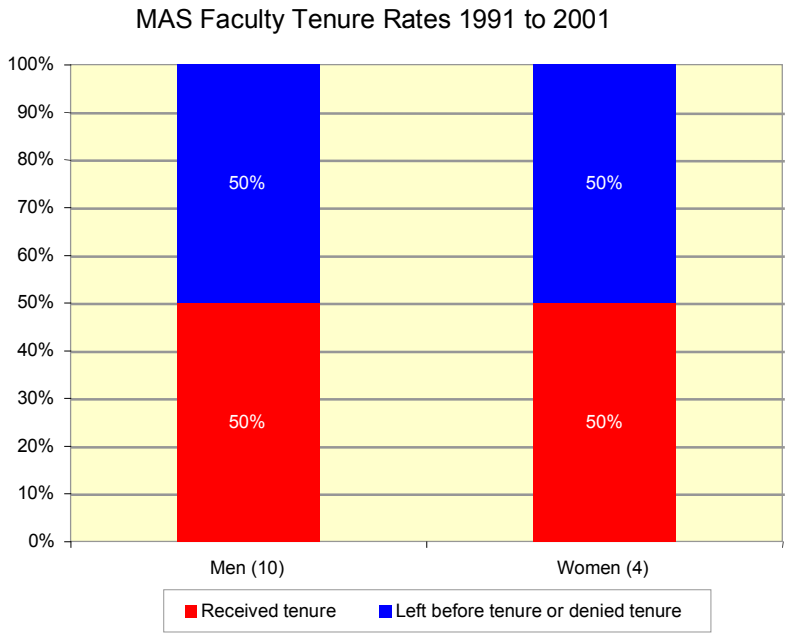


Figure 24

Promotion to Full Professor

The promotion to Full Professor is the next most important promotion after the promotion to tenured Associate Professor. There have been only four promotions of women from tenured Associate Professor to Full Professor in the School. *There have been no women in the history of the School promoted through all of the ranks from Assistant Professor to Full Professor*.

Junior Faculty Exit Interviews

Because of the low tenure rates for women in DUSP and, until just recently, in Architecture, the committee decided to interview former junior women faculty in the two departments. We wanted to gain some insights into possible causes for the low tenure rates, and some understanding of the kind of support junior women faculty get (or perceive they get) in the promotion and tenure process. A very small number of women in DUSP and in Architecture were interviewed. The committee also decided to interview former junior men to see whether issues raised by women might or might not be gender-specific. A very small number of former junior men in DUSP were interviewed. Unfortunately, none of the former junior men in Architecture we approached for interviews were available at the time.

The committee developed a detailed protocol for the "exit" interviews, similar to the one used for the interviews of current faculty. Dr. Christie Baxter, our interviewer for the current faculty interviews, also conducted the exit interviews.

This section of the report summarizes information in the original report. In order to protect the anonymity of interviewees, only nonidentifiable issues are discussed and only nonidentifiable interview responses are provided.

Women and men interviewees reported mixed, positive and negative experiences. Women and men reported positively on:

- *Teaching and service loads*
  Most women and men felt that their teaching and service loads were fair and appropriate. Some praised the accommodations (reduced teaching/service) for junior faculty instituted in their departments.

- *Provost's research fund*
  Most women mentioned the Provost's $15,000 annual research fund (for women hires) as a reason for coming to MIT or as a great benefit to their work here.

On the other hand, several areas of discontent emerged:

- *Promotion process and environment*
  Women and men alike perceived the promotion process as "political" or biased. Responses included:
  "[I was told by colleagues that] there were likely to be political barriers to my getting tenure".
  "I became aware that it [getting tenure] was unpredictable, based on the politics."
  "The standards were noble, but only if they were applied fairly. But they were not applied evenly."
  "There is a lot of discretion about how senior faculty influences a young person's career . . . [promotions are often dependent upon] personal ties and the clout senior faculty are willing to put behind it".

  Some women described negative experiences with senior male colleagues that impeded their goals or changed their outlook on getting tenure.
  For example:
  "[My] expectations about working with senior faculty were wrong . . . [I] felt excluded from [my department]".
  "I found barriers to doing what I hoped to do. . . . In particular, a senior male colleague made it difficult to develop my own research program."
  One of the women reported that a senior male colleague confided that:

"The standards for women and men were different and that things were stacked against the women."

- *Work and family*
  Women and men alike reported difficulties finding enough time to do their work. However, all commented on the larger burden women bear and the larger sacrifices women must make with respect to family life if they are to succeed as academics. For example, one woman discussed the time she did put into childcare and noted: " I knew that I wasn't putting in the time junior faculty have to put in to make tenure, and I was working as hard as I could".

  Some men with families noted how their wives' greater share of family responsibilities enabled their work:
  "As a man I had the flexibility of saying, at any point in time, that for the next two days, I need to focus on my next presentation, or on my paper that needs to be published, or that I need to go to a conference. I don't think this would be as easily available to women faculty. Their role as mothers would be more prescribed."
  "Because my wife was willing to take much of the family responsibility, it was easier than it might have been."

  But one man observed that the family responsibilities of parents, regardless of gender, need to be taken into consideration in the tenure process:
  "The more the tenure process moves from quantity to quality, the less they look at numbers of publications, they would be serving the gender cause. Involved parents simply have fewer hours of the day or week than single or uninvolved parents. As a result, it is not that we produce work of lesser quality, but we might produce fewer articles and books. As long as they take that into consideration, they would be treating involved parents, whether male or female, like single or uninvolved parents."

- *Mentoring*
  Women and men alike described dissatisfactions with mentoring. Some reported being given explicit standards for tenure and good departmental support:
  "The department tried to be very straight [about tenure standards]."
  "The department did a good job [giving tenure goals]."
  "The department did everything it could possibly do to help me through the process."

  But some felt otherwise:
  "They [senior faculty] seemed to be secretive about standards of quality."
  "I never got a clear idea of what was expected other than vague concepts."

  Some felt that they did not get enough guidance or counseling on ways to achieve tenure goals:
  "There was no device that could be taken as some kind of activity plan. There was nothing to follow through on."
  "[I] did not always know how to follow through on it [advice]."

  For women, mentoring was especially problematic. Most women commented on the need to form important alliances with senior faculty in order to succeed. But as young women they found it difficult to establish mentoring relationships with powerful, senior faculty who are mostly men. For example, one woman commented: "It [getting mentoring] is harder when you are young and a woman and there are older men around you."

- *Gender climate*
  In general, women reported that difficulties arise for women as a result of the predominantly male culture, not because of particular individuals, actions, or events. Respondents said, for example:
  "If there were differences, it was because some men cannot see women as their colleagues in very subconscious ways. It is a very male culture. That makes it hard for some women, myself included, to enjoy it. "
  "The culture was male, corporate, and strange to me. In my department, where senior men are dealing with junior women, it is harder for the women to be outspoken."
  "There are ways that being a man or a woman mattered . . . [A senior male colleague] felt that it was a very political department, and he recounted conversations that he had with male faculty in the men's room. For the first time it occurred to me that having a separate bathroom might affect my career."
  "MIT was trying to attract women. . . that helps you get the job, but not to keep it."
  "Everyone at MIT acted in good faith. No one tried to be other than helpful – but there were missed opportunities, and there were times when gender worked against one."
  "It [being a woman] definitely makes a difference. The issue is larger than any individual. It is just the culture."

2.6 Summary and Recommendations

There was a persistent, low number of women faculty in the School in the time period studied. The proportion of women faculty did not change significantly, while the proportion of women students increased. The Provost's programs for recruiting women faculty, begun in 1991, have at varying effectiveness at the department level. Possible evidence of this is the low numbers of job offers made to women, in comparison to men, over the past several years. And the low number of women persisted despite the 100% acceptance rate of offers to women.

However, two Provost programs that seem to have made a difference in recruitment are the research funds for new women faculty and the target-of-opportunity appointments. Our interviews with former and current faculty indicate that the research funds are a definite incentive for women to come to MIT. The target-of-opportunity appointments increased the number of senior women. But at the same time, the number of junior women dropped. A few women were promoted to senior, but others left before tenure and were not replaced in large enough numbers.

The two older departments in the School—DUSP and Architecture—have poor histories of tenuring women. In Architecture, the tenure rate has improved recently. Our exit interviews with former junior faculty in DUSP and Architecture revealed possible sources for low tenure rates. Several women and men reported that mentoring is inadequate. Some said that the standards for tenure are spelled out, but guidance in reaching those standards is not adequate. Women felt that the demands of family life are difficult or impossible to reconcile with the demands of academic life. Women also reported general negative consequences or pressures of being a woman in a predominantly senior, male department.

The male culture of a department can be changed by increasing the number of women in the department. However, bringing in senior women from outside, as has been done successfully in recent years, is not enough to help junior women. Junior women do not have role models for promotion, that is, senior women recently tenured within the

department. By contrast, junior men have role models. They see others just like them—men—who have made it in their department in recent years.

The women interviewees from DUSP were hired before completing their PhDs. They spent their beginning year(s) in the department working to complete their dissertations. These women lost valuable time counted toward tenure. It is important to note here that ten of the eleven current faculty that were tenured in DUSP had completed their PhDs prior to their appointments.

The trend of hiring some junior men, but no junior women, at the Associate level may also skew tenure rates in favor of men.

Since the end of this study, the numbers and proportions of women faculty have increased. In order to keep progress going, and in view of some of our findings, we make the following recommendations:

Find and Hire More Women Faculty
These recommendations concern the effective communication of Institute recruitment programs to departments, and the expansion of these programs where appropriate. They also concern the hiring of junior faculty, and the nature of faculty searches in general.

- An Institute or school-wide system should be established to work with Department Heads, and their departmental steering committees or councils, on the Provost's programs for hiring women faculty, and to advise them on ways to implement these policies. The Provost's Visitors Funds, target of opportunity appointments at the Associate with tenure level, and the serious search policy are now underutilized or ineffective.

- Department Heads, or their steering committees, should in turn communicate information about the Provost's programs to senior faculty—the people who need to look actively for women candidates for faculty positions.

- The departmental percentage (25%) of women faculty that determines eligibility for the Provost's programs should be increased for some programs where appropriate. For example, if the pattern in some departments of hiring women mostly at the senior level continues, the percentage of women faculty in these departments may surpass 25%. But, at the same time, these departments may still have a disproportionately low number of junior women and no longer have access to the automatic Provost funds for junior women appointments.

- The Provost's target-of-opportunity appointments should apply at the junior, as well as the senior level. Broadening the eligibility of this appointment would help increase the number of junior women faculty in the School. It would help MAS, in particular, since this department does not hire at the senior level.

- Under certain circumstances, consideration should be given to the balance of senior and junior women in a department when appointments of women faculty in regular, open positions are made. For example, when a department has few or no junior women, priority should be given to junior hiring.

- Departments have recently stopped hiring PhD candidates. This should be established as a School practice. Ideally, junior faculty should have one or more years of research or design experience prior to their appointments. This practice

might narrow the pool of women candidates for faculty positions, but it might also increase the chances of junior women achieving tenure.

- Every effort should be made to hire junior women and junior men in equal numbers at the Associate level.

- Faculty searches should not rely solely on personal leads and contacts. When a search committee is comprised mostly of male faculty, personal leads and contacts may lead to mostly male candidates.

- Faculty searches should be as intellectually broad as possible, and as inclusive of all departmental faculty as possible. Broad searches increase the pool of women candidates. Broad search committees and reviews of candidates by the full faculty allow for more checks for the inclusion of women candidates.

Mentor and Promote Junior Women

- Departments should establish new, more effective mentoring systems that take into account the successes and failures of previous mentoring practices. Departments could offer incentives to senior faculty to take on the time commitment necessary for effective mentoring.

- In order to monitor and assess possible issues underlying the low tenure rates for women in DUSP and (until just recently) Architecture, exit interviews with junior women in these departments should be continued until the tenure rate for women improves.

Monitor the Promotions of Women to Full Professors

- Only four women in the history of the School were promoted from tenured Associate Professor to Full Professor. The promotions of current women tenured Associate Professors should be monitored to make sure that they occur in a timely way.

Recognize Family Responsibilities

- Department Heads should communicate to all faculty, on a regular basis, clear and accurate information about the new Institute family support policies. Department Heads should openly support women, and men as applicable, who use these policies, in order to avoid potential stigmas resulting from the use of these policies.

Create a Productive Climate for Women Faculty

- The climate for women faculty will likely be improved if the recommendations above and those given elsewhere in this report are implemented.

- The climate of a department is dependent in part on the attitudes and actions of the Department Head. The Department Head should communicate to the faculty, and to senior male faculty in particular, that gender bias will not be tolerated and that the department will be fully supportive of its women faculty. However, in the end, the climate of a department is the responsibility of all faculty. The dissemination of the results of this study to faculty, together with regular, formal reassessments and public discussions of the status and treatment of women faculty, should help

educate all faculty about important gender issues. All faculty may then be more willing and able to create a productive climate for women faculty.

3 Salary

The committee analyzed and compared the 9-month salaries of all Rank List 1 women and men faculty in the School. Three sets of data were provided to us:

- the 9-month salaries of Rank List 1 faculty—by department, rank, and gender—for the academic year 2000
- the annual salary increases for Rank List 1 faculty—averaged by gender, department, and year—from the academic year 1991 to the academic year 2001
- the Institute Faculty Salary Review, Departmental Equity Listing, for the academic year 2000

To round out our understanding of salary, two committee members met with the Department Heads to discuss faculty salaries in their departments. They also met with the Dean to discuss faculty salaries school-wide.

There are some substantial differences between the salary levels in the three departments that are field-related. Because of these departmental differences, most of the salary analyses were done within departments, and not school-wide.

We found imbalances between women's and men's salaries, to the disadvantage of women, in two departments. School-wide, the percentage of women who were low earners in their rank was significantly higher than percentage of men who were low earners in their rank.

3.1 Department Head Interviews

Two committee members met with the heads of MAS, Architecture, and DUSP to discuss departmental practices for setting faculty salaries and deciding amounts of annual increases. The individual faculty salaries from the 2000 data were also reviewed with each Department Head.

Department Heads gave varying reasons for salary differences and varying criteria for salary increases within their departments.

In MAS, differences between salaries were attributed mostly to seniority, that is, rank and years in a rank. Salaries were mostly level otherwise. Efforts have been made to compensate for any past, field-related differences in salaries.

In Architecture, differences between salaries were often attributed to field. Architecture faculty come from a variety of backgrounds and engage in different kinds of research and practice—visual arts, art and architectural history, architectural design, computer science, and engineering. Salaries vary substantially according to outside (academia) compensation in these fields. An important criterion given for salary increases was departmental teaching and service, sometimes outweighing other factors such as international standing in field.

In DUSP, differences between salaries were attributed to field, international standing (sometimes "star" status), and seniority. Criteria for increases included academic performance, outside offers, and citizenship (service and other contributions to department life).

Because the number of women in each department is so small, it is difficult to tell whether different departmental criteria for salaries impact women's salaries and men's

salaries differentially. In Architecture, however, the setting of salary by field may adversely affect some women's salaries, as well as.

3.2 Salary Data Analysis

The 2000 salary data were correlated with other faculty data. For each department and for the entire School, plots by gender were made of

- salary versus age
- salary versus post highest degree age (years since highest degree)
- salary versus academic age (years since first academic appointment)
- salary versus MIT age (years since MIT appointment)

For each of these "by age" plots, separate plots were made to identify faculty rank, target of opportunity appointments, and "inside" appointments (faculty with MIT degrees).

- salary distribution within rank

These plots show the position of each person's salary with respect to other faculty in the same rank and department. The lowest salary in each rank in a department is given as 0, the highest as 1. Each person's salary is calculated as a percentage of 1, that is, as a percentage of the highest earner in her/his rank. Where there is only one person in a rank, that person's salary is set at .5, or the midpoint of the salary range in that rank.

- average, maximum, and minimum salaries by rank

The maximum and minimum salaries give the range of salaries for women and for men within a rank. To see how women's and men's salaries differed at the high and low ends of salary ranges, the differences between women's and men's minimum salaries, and the differences between women's and men's maximum salaries in each rank were calculated. The percentages of these differences were also calculated (by dividing the difference between the maximum (minimum) man's salary and maximum (minimum) woman's salary by the lower of these two salaries).

The departments also provided data on

- average annual salary increases (not including promotion increases) by gender from the academic year 1991 to the academic year 2001

The Dean's Office provided

- the Institute Faculty Salary Review, Departmental Equity Listing, for academic year 2000.

This last set of data is discussed in a separate section below.

All of the information above was examined thoroughly. In the end, the most relevant data were salary in relation to age and rank, salary in relation to rank alone, the magnitudes of differences between women's and men's maximum and minimum salaries (averages were not meaningful because of small numbers), and the average annual salary increases.

Most of the findings in the original report are given by department, and refer to confidential salary information. Thus, findings are only summarized here, and departments are not identified.

Departmental findings

In two departments, we found that a significant number of women were earning less than men in the same rank and of the same approximate age. Some of these inequities may be attributable in part to the fields in which the women work, that is, fields with low "market" compensation. Some may be attributable to time in rank. In the third department, we found no inequities. The highest earner in one department, and school-wide, was a woman.

In two departments, the average salary increases for women and men were roughly the same over the 1990 to 2001 time period. In one department, the average salary increases for women were higher than those for men.

School findings

Some strong gender differences in salaries were evident when the three departments were looked at together.

There was a marked imbalance between women's and men's salaries in relation to rank. The school-wide salary distribution plot is shown in Figure 25. Most women's salaries are below the midpoint of the salary range in their rank and department, whereas men's salaries are more evenly distributed. 73% of women fall below the midpoint compared to 54% of the men. Also striking are the numbers of women and men that are the lowest earners in their rank and department. 33% of the women are the lowest earners in their rank, compared to 10% of the men.

At the high end, the percentages are more comparable. 13% of the women are highest earners, compared to 17% of the men. (However, the margin of difference between one of the women highest earners and the highest male earner in the same rank is slim.) The top earner in the school is a woman. The low, absolute number of women highest earners compared to men is not surprising. It can be seen, in part, as a consequence of the low number of women in the School.

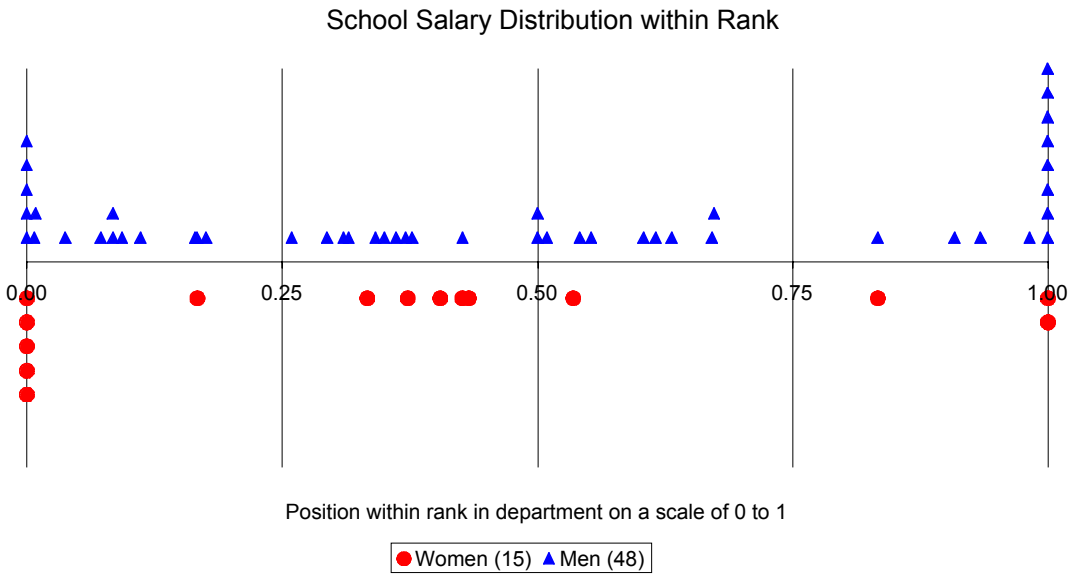


Figure 25

The Institute Faculty Salary Review

The Institute Faculty Salary Review, Departmental Equity Listing, is a yearly review of women and minority salaries compiled by the Institute. It is the only such review known to this committee. It appears to have flaws as a method for assessing salary equity. It certainly did not reveal anything substantive about salaries in the School.

The Listing compares each woman's and minority's salary with the average salary in the person's rank and department. In order to make this comparison, adjustments are made to each women/minority salary according to the deviation of the woman/minority's age from the average age in the rank and department, and a corresponding assumed annual salary increase. This age-adjusted salary is then related to the average salary. Specifically, each woman/minority's age-adjusted salary is divided by the department average salary, to provide an "age-adjusted position" and a dollar amount by which the woman/minority salary is above or below the average. (The details of the calculation are given in an Institute memo.)

Calculations for three hypothetical women faculty are shown in Figure 26.

Faculty	Gender	Age	Salary	Average age of department without incumbent	Age difference from the average age	Average salary of department without incumbent	Salary difference from average salary	Age adjusted salary	Age-adjusted position	Amount above/below average salary
1	F	56	$125,000	58	-2.00	$94,000	31,000.00	$135,200	1.44	$41,200
2	F	60	$102,000	58	2.00	$94,000	8,000.00	$94,305	1.00	$305
3	F	63	$101,000	58	5.00	$94,000	7,000.00	$83,015	0.88	-$10,985

Figure 26

There are shortcomings in this method of review.

First, only women and minority salaries are reviewed. The age-adjusted positions of non-minority men are not calculated. However, one very high earner in a rank could push the age-adjusted positions of all faculty in the rank down or below average. The converse is also true. Inequities between men and women cannot be determined without seeing the age-adjusted positions of all faculty in a rank.

Second, small differences in the actual ages of faculty can result in large absolute differences in their age-adjusted salaries. See, for example, Faculty 2 and Faculty 3 in the sample calculations in Figure 26. The two women are only three years apart in age. Their salaries differ by only $1,000. However, one woman's salary adjustment results in a salary $300 above average, the other in a salary $11,000 below average. Without a thorough understanding of the underlying calculation method, it would be easy to misconstrue the large below-average salary of one of the women, and the small above-average salary of the other.

3.3 Summary and Recommendations

In 2000, there were imbalances between women's salaries and men's salaries to the disadvantage of women in two departments. The school-wide imbalance of salaries within rank is striking. If the all male, non-Rank List 1 faculty in the School —Department Heads, Research Center Directors, and Institute administrators—were included in our data, the imbalance between women's and men's salaries would likely be even more striking. In addition to missing some male faculty from our data, we have only a one-year snapshot of salaries, a small number of women in this snapshot, and a large number of variables that affect salary from field to seniority to performance to service.

The longer-range data on salary increases show a balance between women and men in two departments, and an advantage to women in one department. However, we have only the averages of annual salary increases which would mask individual inequities if they exist here.

It is difficult to determine the sources of the salary imbalances that we did find. We cannot say that bias plays any role in these imbalances. Nonetheless, these imbalances need to be understood and corrected where necessary. Our recommendations are to:

Review and Correct Inequities in Current Faculty Salaries

- The Dean should review current faculty salaries using the methods of analysis in the original report and correct any inequities.

Establish a School-wide System for Monitoring Salary Equity

- The one existing Institute-wide system we know of (the Institute Faculty Salary Review) is inadequate and potentially misleading. Analysis methods like those used in the original report should be used every year, and the results reviewed by the Department Heads and the Dean, before salary raises are decided.

- The Dean and the Department Heads should examine factors that might play a part in the lower salaries of women, from field to performance. The field factor is one that affects salaries in more ways than gender. It causes salary inequities between departments, and between Schools. However, when field-related inequities exist

within a small department and when these inequities correlate with gender, then faculty morale, collegiality, and ultimately, performance may be at risk. The Dean and Department Heads should make every effort to equalize salaries among different fields within a department.

4 Recognition and Resources

The committee had access to very limited information pertaining to faculty recognition and resources. Under this heading we included information on awards, service, and workspaces—specifically, HASS awards, funded chairs, Institute committee membership, and faculty office, research and support spaces. Relevant faculty numbers for some of this material were very small. Conclusions about gender equity were thus difficult or impossible to make in some cases. From the information we had, we found that the distribution of awards and spaces was not equitable in some cases.

4.1 HASS Awards

The Provost's HASS Award is given to faculty in support of projects in the areas of humanities, arts, and social sciences. Awards are made annually. Priority is given to projects with few other sources of funding. Proposals in the range of $3,000 to $20,000 are considered.

The awards are made by a committee consisting of the Provost, the Associate Provost for the Arts, the Dean of the School of Humanities, Arts, and Social Sciences, and Dean of the School of Architecture and Planning. This committee carries responsibility for making awards and determining their amounts. Responsibility for encouraging and soliciting applications for awards is carried by the School.

The Dean's Office compiled data on this award for seven years, from the academic year 1995 to the academic year 2001. (Prior years were no longer on file.) Data were provided for Architecture and DUSP. MAS projects do not satisfy eligibility requirements for HASS awards.

For each of the seven years, the following information was compiled by rank and gender for DUSP, for Architecture, and for the two departments together: number of requests, number of awards, total amount of awards requested, average amount requested per person, total amount of awards given, and average amount of award received per person. Because the numbers of awards requested and made each year are very small, the meaningfulness of the averages we had was very limited. Our appraisal and findings were based on data for the two departments together. Data for 2000 were excluded since there were no women applicants in that year.

Findings

- In every year except 2000, the percentage of awards requested by women faculty was lower than the percentage of awards requested by male faculty. (See Figure 27, HASS Award Chart 1.)

- In every year except 2000, the percentage of the awards requested by women faculty was equal to or higher than the percentage of women faculty in the two departments. (See Figure 27, HASS Award Chart 1). Conversely, the percentage of the awards requested by male faculty was mostly less than the percentage of male faculty in the two departments.

- In every year except 2000 , the percentage of awards received by women faculty was lower than the percentage of awards received by male faculty. (See Figure 27, HASS Award Chart 1.)

- In all but one year, the success rate (number of applicants versus the number of recipients) of women faculty was lower than the success rate of male faculty. (See Figure 27, HASS Award Chart 2.) The lower success rate is most notable in one year (1996) when there were high numbers of women and men applicants. However, the numbers of applicants in most other years are low, so it is difficult to generalize from these numbers.

- The percentage of the total dollar amount awarded to women was mostly higher or comparable to the percentage of the total awards that women received. (See Figure 27, HASS Award Chart 1). In other words, the average award amount to women was either higher than, or comparable to, the average award amount to men in most years. (See Figure 27, HASS Award Chart 3). In only one year (1999), the average award amount to women was appreciably lower than the average award amount to men.

- The percentage yield based on the average amount requested versus the average amount awarded was comparable for both women and men faculty. The yield for women was lower than that for men in only one year (1998). (See Figure 27, HASS Award Chart 3.)

HASS Awards

Chart 1

	1995	1996	1997	1998	1999	2000	2001
Number of awards requested by women faculty as % of total number requested	44% (N=4)	41% (N=7)	23% (N=3)	25% (n=2)	38% (N=3)	-	33% (N=3)
Number of awards received by women faculty as % of total awards	43% (N=3)	20% (N=1)	14% (N=1)	33% (N=2)	29% (N=2)	-	20% (N=1)
Total dollar amount awarded to women faculty as % of total dollar amount awarded	54%	19%	19%	37%	24%	-	18%
% of women faculty in SAP (less MAS faculty)	27% (N=13)	24% (N=12)	23% (N+12)	22% (N=11)	22% (N=11)	21% (N=11)	19% (N=10)

Chart 2

	1995		1996		1997		1998		1999		2000		2001	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Number of awards requested	5	4	10	7	10	3	6	2	5	3	8	0	6	3
Number of awards received	4	3	4	1	6	1	4	2	5	2	4	0	4	1
Percentage of total awards received	80%	75%	40%	14%	60%	33%	67%	100%	100%	67%	50%	0%	67%	33%

Chart 3

	1995		1996		1997		1998		1999		2000		2001	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Average amount requested	12,987	15,214	18,335	16,988	14,250	16,407	14,188	19,959	17,731	14,838	16,942	0	19,235	19,496
Average dollar award received	7,133	11,207	15,563	15,000	13,333	19,000	15,005	17,500	13,920	11,250	10,625	0	11,250	10,000
Percentage yield	55%	74%	85%	88%	94%	116%	106%	88%	79%	76%	63%	0%	58%	51%

Figure 27

Conclusions

In recent years, women have taken advantage of HASS awards at a greater rate than men. They applied for awards in proportions higher than their proportions on the faculty. This may indicate that a greater percentage of the women faculty (in DUSP and Architecture) than the men faculty (in DUSP and Architecture) engage in research with few other sources of funding—a main criterion of the award. Or, women may simply be more apt to seek out and utilize this well-publicized source of Institute funding.

However, a greater percentage of awards went to men in every year from 1995 to 2001, and the success rate for women applicants was less than the success rate for men in all but one year. On the other hand, the average award amounts to women were greater than, or approximately the same as, the average award amounts to men in all but one year.

The significance of these findings needs to be judged in relation to the overall low numbers of faculty applicants and recipients of HASS awards.

4.2 Funded Chairs

There are two kinds of chairs at the Institute:

- Senior chairs which typically go to senior (tenured) faculty. These are usually renewed every five years, but are often for life.
- Junior chairs, also called career development chairs, which go to junior faculty. These are typically for a 3-year, non-renewable period.

Funds given for a chair can follow three paths:

- Given directly to a particular department. For example, the Ford Chairs are housed in DUSP.
- Given to a particular school where it is controlled by the Dean. The Dean can assign it to faculty in any department, unless there are specific stipulations.
- Given to the Institute. This means that it is centrally controlled. The Institute can assign it to a faculty member in any department, unless there are specific stipulations. Or, the Provost can assign it to a particular department. This chair can be junior (career development) or senior.

Each year, the Assistant Provost for Administration, Doreen Morris, sends to the Deans a list of the centrally controlled chairs that are open. The Deans submit nominations for these chairs, and the Provost decides which faculty will fill the vacancies. When the term of a chair holder expires, the chair is open for reassignment. The Schools and departments have the right to solicit and choose faculty themselves. However, these choices must still be approved by the Dean and Provost.

The following methodology was used to assess the distribution of chairs in the School.

The Dean's Office provided a list of all chair holders from the academic year 1990 to the academic year 2001. Each chair was then designated as centrally controlled by the Institute, belonging to the School, or belonging to one of the three departments. For chairs held in 1990, the year of the initial appointment was also indicated. We limited our appraisal to Architecture and DUSP. In MAS, there is ready access to career development chairs and they are distributed widely across all men and women junior faculty.

For the period beginning with 1991, we noted as juncture points each occasion when a chair was vacated, and each occasion when a new chair became available in the School. A total of 26 junctures were noted. At junctures where male faculty were appointed, an examination was made of all available women faculty in that particular year who might be eligible for the chair in the context of the field specified, if any. (We did not consider women faculty already holding a chair in that year as eligible.)

This analysis did not take into account possible changes in the terms of eligibility of, or the field associated with, a chair at the time a chair was vacated. In some cases, there were ambiguities about the terms of eligibility of chairs. Such changes and ambiguities could have had an effect on the eligible pool from which a new candidate could be selected.

Findings

- Over the 10-year period there were 26 juncture points.
- At 7 junctures, the available chair was filled by a woman.
- Of the remaining 19 junctures when the available chair was filled by a man, there seemed to be only one instance when a woman appeared to meet the specification of field for the chair.

Conclusion

We did not find indications of gender inequity in the distribution of chairs in the School from the data we had at hand. Still, the fact remains that no women faculty in the School have had permanent, senior chairs.

4.3 Institute Committees

The President's Office supplied the committee with data on Institute committee membership from the academic year 1990 to the academic year 2000. See Figure 28. Numbers in the tables are totals over the 10-year period.

Most often, there were no women faculty from our School on Institute committees. Out of 15 Institute committees, women from our School were members of only 4 committees over the entire 10-year period. The numbers of our School's women faculty on each of these committees, out of the total number of women faculty on each committee, are as follows:

The Committee on Faculty Administration: 1 of 6 women
The Committee on Graduate School Programs: 1 of 10 women
The Killian Award Committee: 2 of 8 women
The Edgarton Award Selection Committee: 1 of 9 women

On the other hand, male faculty from our School were represented on 13 of the 15 committees. The low representation of our women faculty on Institute committees is, in part, a reflection of the low number of women in our School.

School Representation on Institute Committees
1990 – 2000

I. Committee on Academic Performance

	Male	Female	
SAP	1	0	1
Other Schools	25	5	30
N =	26	5	31

Note: 0% of SAP members were female.
0% of women on the committee were from SAP.

II. Committee on Corporate Relations

	Male	Female	
SAP	2	0	2
Other Schools	23	2	25
N =	25	2	27

Note: 0% of SAP members were female.
0% of women on the committee were from SAP.

III. Committee on Curricula

	Male	Female	
SAP	1	0	1
Other Schools	29	6	35
N =	30	6	36

Note: 0% of SAP members were female.
0% of women on the committee were from SAP.

IV. Committee on Discipline

	Male	Female	
SAP	0	0	0
Other Schools	19	6	25
N =	19	6	25

Note: 0% of SAP members were female.
0% of women on the committee were from SAP.

V. Faculty Policy Committee

	Male	Female	
SAP	3	0	3
Other Schools	29	13	42
N =	32	13	45

Note: 0% of SAP members were female.
0% of women on the committee were from SAP.

VI. Committee on Faculty Administration

	Male	Female	
SAP	2	1	3
Other Schools	24	5	29
N =	26	6	32

Note: 33 1/3% of SAP members were female.
17% of women on the committee were from SAP.

VII. Committee on Graduate School Programs

	Male	Female	
SAP	7	1	8
Other Schools	76	10	86
N =	83	11	94

Note: 13% of SAP members were female.
9% of women on the committee were from SAP.

VIII. Committee on the Library System

	Male	Female	
SAP	4	0	4
Other Schools	19	5	24
N =	23	5	28

Note: 0% of SAP members were female.
0% of women on the committee were from SAP.

IX. Committee on Nominations

	Male	Female	
SAP	5	0	5
Other Schools	21	9	30
N =	26	9	35

Note: 0% of SAP members were female.
0% of women on the committee were from SAP.

X. Committee on Outside Professional Activities

	Male	Female	
SAP	3	0	3
Other Schools	26	3	29
N =	29	3	32

Note: 0% of SAP members were female.
0% of women on the committee were from SAP.

XI. Committee on Student Affairs

	Male	Female	
SAP	2	0	2
Other Schools	23	4	27
N =	25	4	29

Note: 0% of SAP members were female.
0% of women on the committee were from SAP.

XII. Committee on the Undergraduate Program

	Male	Female	
SAP	1	0	1
Other Schools	38	10	48
N =	39	10	49

Note: 0% of SAP members were female.
0% of women on the committee were from SAP.

XIII. Committee on Undergraduate Admissions & Financial Aid

	Male	Female	
SAP	0	0	0
Other Schools	23	4	27
N =	23	4	27

Note: 0% of SAP members were female.
0% of women on the committee were from SAP.

XIV. Killian Award Selection Committee

	Male	Female	
SAP	3	2	5
Other Schools	30	8	38
N =	33	10	43

Note: 40% of SAP members were female.
20% of women on the committee were from SAP.

XV. Edgerton Award Selection Committee

	Male	Female	
SAP	1	1	2
Other Schools	24	9	33
N =	25	10	35

Note: 50% of SAP members were female.
10% of women on the committee were from SAP.

Figure 28

4.4 Space

The Committee looked at the allocation of office and other spaces to faculty members in each of the three departments in the School for the academic year 2001. Information was obtained from The Institute Data Warehouse, and from Departmental Administrators and Assistants.

The square footage for all types of space associated with an individual's activities was obtained. The total space allocated to each faculty member is the sum of the square footage of the following spaces:

- Individual office space
- Graduate student, teaching assistant, or research associate office space/divided by the total number of faculty members in the program group
- Individual studio space (if dedicated)
- Sponsored research office space
- Closet and office staff space (MAS only)

Findings
Because of the confidentiality of some information, the findings in the original report are summarized here.

We found some inequities in space allocations, to the disadvantage of women, in one department. In another department, women's spaces were at or below the median space allocation. However, differences in spaces in this department may be attributable to research needs. In one department, a woman had the largest space.

Both MAS and DUSP have recently undergone space changes. Thus, the numbers in the original report are already out of date. Many faculty in DUSP now have smaller spaces than previously. The MAS space changes will be short-lived. MAS will make a large move when their new building is complete.

4.5 Summary and Recommendations

Our findings on awards, chairs, committees, and space are mixed. There were some areas of concern. We recommend the following:

Continue to Track HASS Awards

- A disproportionately high number of women faculty have applied for HASS awards in recent years. Nonetheless, a lower percentage of the awards have gone to women than men. In addition, the success rate of women applicants is lower than that of male applicants. The School should continue to track the distribution of HASS awards with an eye toward possible sources for the high rate of women applicants and the low success rates of women, and possible connections with other gender issues.

Find Permanent Chairs for Senior Women

- The distribution of chairs over the past 12 years appears to be equitable. However, no senior women in the School have ever had permanent chairs. This was a major concern for DUSP senior women in our interviews (see section 5.2). This may be a consequence of chairs becoming vacant at inopportune times for women, or of

changes in eligibility requirements for chairs when they become vacant. In any case, the Dean and the Department Heads should work with the Institute administration to find permanent chairs for senior women in the School.

Appoint Women Faculty to Institute Committees

- There have been few women faculty from our School on Institute committees. The Dean and the Department Heads should actively find, encourage, and recommend women faculty for appointments to these committees. At the same time, care should be taken to not overburden the few women in the School with a disproportionate share of committee service.

Monitor Space Allocations and Correct Inequities

- The inequities we found in one department should be corrected.

- The current allocation of spaces in DUSP should be reviewed, and the upcoming allocation of new MAS spaces should be looked at closely.

5 Faculty Experience

Interviews of faculty were conducted to gain an understanding of the nature and quality of women faculty lives within their departments, the School, and the Institute. The interviews were used to access information that is essentially experiential, subjective, and not easily quantifiable. They were also used to get some information difficult to retrieve from department or School records. Almost all of the women faculty in the School were interviewed, together with a comparable number of male faculty—in total, just over 1/3 of our entire faculty.

The interviews covered the following topics:

- career and life stage on coming to MIT
- decision to come to MIT
- goals
- connections with other faculty
- participation in decision-making
- experiences with special requests, considerations
- considerations of leaving
- experiences with incentives, awards
- teaching responsibilities and experiences
- advising responsibilities and experiences
- committee and administrative responsibilities and experiences
- balancing work and family/personal responsibilities
- perceptions of general gender climate

We were very fortunate to have Suzanne de Monchaux, a social scientist with considerable expertise and experience, and a Research Affiliate in the School, assist us in the design and analysis of the interviews.

5.1 Methods

The interviews were designed to provide a portrait analysis of the women faculty, rather than a formal, statistical analysis. We did not have specific hypotheses that we were testing, other than some based loosely on findings from the School of Science report. Instead, we developed categories of questions broad enough to capture a full range of faculty experiences from the time of hire to the present, from personal experiences to professional ones.

Faculty interviewed

The committee decided to interview all of the women faculty, both junior and senior. There are few long-time senior women in the School. At the time the interviews were conducted, seven of the ten senior women had been senior at MIT three years or less. They were either hired recently at the senior level, or were promoted to senior recently. We included the five junior women faculty because we were already tapping into the recent, junior women faculty experiences of recently promoted senior women, and because some current junior women faculty had expressed an interest in the work of the committee and an opportunity to have their voices heard.

In order to make the findings of the women faculty interviews more complete, the committee decided to interview a comparable number of male faculty. For each woman faculty member, the committee identified a "matching" male faculty member. Matches were made with respect to as many variables as possible—for example, age, career stage, time at MIT, field, family status. Male faculty responses were not intended to be

compared directly with women faculty responses, or to be analyzed in their own right. Rather, male faculty responses were intended as a gauge for whether issues raised by women might or might not be gender-specific.

In advance of the interviews, the committee sent an email to the entire school faculty with information concerning the work of the committee and the planned interviews. A second email was sent only to those faculty we proposed to interview. This second email contained more information about the interview process, and the handling of confidentiality.

All of the women faculty, except two, were eventually interviewed. (One woman was not available at the time of the interviews. The other declined to be interviewed.) Matching male faculty for all of the interviewed women, were also interviewed. In total, thirteen women and thirteen men were interviewed—just over 1/3 of our School's faculty.

Interviewer

The interviews were conducted by Dr. Christie Baxter, a Principal Research Scientist in DUSP, and an experienced interviewer. The committee decided to use an interviewer who was not a member of the committee and not a faculty member for several reasons.

We wanted to maximize the openness of faculty responses, and minimize the self-censorship or distortions that can occur in personal interviews, especially ones connected to charged topics such as gender equity. We felt that an interviewer outside of the committee and the faculty would best serve this purpose.

In particular, we knew that junior faculty could not be asked to discuss certain issues with senior faculty who might have some influence in future promotions or other decisions. We also felt that senior faculty interviewees might not feel comfortable or be open in discussing certain issues with colleagues, for a variety of personal or professional reasons. Additionally, a non-faculty interviewer might be viewed by faculty interviewees as better able to maintain confidentiality of responses.

We wanted to maintain a consistent approach in all the interviews. This would be difficult to do with multiple (committee) interviewers.

Christie Baxter was known by some of the faculty interviewed in DUSP. However, we decided that this would not be a significant impediment to the candor of these faculty in the interviews.

Baxter documented the interviews using handwritten notes and tape recordings.

Interview protocol

The committee developed a detailed interview protocol. The protocol begins with a brief summary of the work of the committee, and the intentions and aims of the interviews. Measures for protecting the anonymity of responses are then discussed. Fourteen questions follow. The questions were carefully constructed to avoid leading or suggestive words and phrases. Questions were tightly focused so that responses from different faculty could be compared easily. With one exception, questions were framed in gender-neutral terms. Questions were organized so that the two most personal or gender-specific questions—concerning patterns of life and work, and observations of gender climate—were asked toward the end of the interview. At the conclusion of the interview, faculty were given an opportunity to raise any issues not covered in the interview.

The protocol was designed so that the interview would last between 1 and 1 1/2 hours. In order to assess the effectiveness and clarity of the questions, and the overall timing of the protocol, it was tested on a senior male faculty member in the school. (The protocol could not be tested on a woman faculty because all women faculty were to be included in the actual interview process.) After the test, the questions were revised slightly.

Analysis

The committee was divided into three analysis teams. Each team was assigned to read and summarize the responses from all the interviewees in one department. Each analysis team was composed of two people, neither one in the respondents' department, and each one in a different department. (That is, the analysis team for department X was comprised of one person from department Y and one person from department Z.) Each team was given the responses from a department sorted by individual and sorted by question. Responses were sorted by individual so that each individual's story could be read as a whole. Responses were sorted by question to compare responses from different individuals. Responses were identified only by the gender and rank (senior or junior) of the respondent.

The committee developed a standard format for summarizing all of the responses from a department. The format is in four parts. The first part provides for short summaries of responses by question. The second part provides for summaries of significant gender (women's) issues. The third part provides for summaries of significant nongender issues. The committee felt that if strong faculty issues emerged that were gender-neutral, it would be important to document these in our report. The forth part is optional, and provides a place to give any general findings not covered by the first three parts.

The second and third parts covering significant issues (gender and nongender) were divided into categories to facilitate recommendations by the committee. Issues were sorted according to whether they related to

- a formal departmental, School or Institute policy
- an informal practice (may likely be a departmental practice, but include School or Institute practices if they come up)
- Department, School, or Institute culture, atmosphere, expectations
- personal experience, expectations, needs
- other

Analysis teams were asked to give summaries that would not identify individuals, and to use supporting, nonidentifiable quotes where possible. They were also asked to give numbers of women and men who raise any issue, to give an informal "weight" to responses. In the end, a number of very pertinent responses had to be rephrased or omitted in the summary forms because they could be identified with individuals.

The analyses of the responses were undertaken with an awareness of the possible biases inherent in the interviews. For example, statements of facts might be statements of perceptions of facts, women and men may respond differently to certain questions, and importantly, there may be relevant stories that were self-censored.

Before the team analyses of the interviews began, our interviewer, Christie Baxter, gave us a short overview of all of the interviews. This was important for us because Baxter was the only person to see all of the responses from all three departments, and was thus in a position to observe cross-departmental issues.

5.2 Findings

Baxter's overview of the interviews included concerns that emerged across gender, rank, and department:

- Confidentiality and editing of responses
  Several respondents—women and men, junior and senior—edited their responses in different ways (by asking to retape or revise responses, asking not to be taped, indicating that they had stories that they could not tell)
- Life/work
  Several respondents indicated that balancing family or personal lives with MIT work cannot be discussed openly and generates high levels of stress
- Nongender issues
  Several respondents suggested that other pressing issues, such as minority issues, need to be analyzed.
- Distribution of findings
  Several respondents wanted the report of the committee, and results of the interviews, to be made available to the faculty.

A detailed synopsis of the team findings for each department was given in the original report. The full team summaries for each department were given in an appendix to the report. In order to protect the anonymity of interviewees, the findings are given in brief here. Issues are not identified with specific departments. The main gender (women's) issues, as well as non-gender issues, are described. If the Institute wishes to increase the number of women faculty and to create an attractive working environment for women faculty, *any* issues of concern to women are important to consider, regardless of whether they are also important to men. For similar reasons, both negative and positive experiences are described.

<u>Nongender issues</u>
Women and men respondents, school-wide, reported on positive aspects of their lives at MIT. These included:

- *Goals*
  Many respondents said they were moving towards their career goals. Responses included:
  "MIT can open doors and take you places you did not expect to go."
  "[My] goals have evolved and become clearer."

- *Teaching*
  Nearly all of the respondents said that their teaching assignments were manageable and appropriate.

Women and men respondents also reported difficulties. Most of the issues raised were school-wide, a few were departmental. The main issues included:

- *Mentoring*
  Many respondents described inadequate mentoring. But perceptions of mentoring varied. For example, in one department, all of the senior respondents said that they mentor junior faculty, but all of the junior respondents said that they were not mentored.

- *Inclusion of junior faculty in decision-making*
  A significant number of junior women and men (in some departments, all junior women and men) expressed disappointments with the way decision-making is done, or said that they do not have enough influence in decision-making.

- *Incentives*
  Several women and men respondents (both junior and senior) questioned the fairness or openness of the distribution of resources and incentives. Responses included:
  "The hardest thing about being at MIT is finding out what you can get and who to ask."
  "It is a mystery how money is doled out."
  "Information should be more public . . . should be spelled out."
  "I do not believe my department has distributed these resources in a fair way."

- *Pace and pressure of work*
  The extreme pace and pressure of work at MIT or within their department was an issue for women and men respondents:
  "I guess the philosophy here is to burn rather than to conserve."
  "There is not enough time. . . Things are spinning out of control."
  "I do not have enough time and energy to do everything."
  "The correct answer here is 100 percent goes to MIT."
  "Right now, I give MIT 90 percent of my time—counting sleep."

- *Committee overload and inefficiency*
  For several respondents, the pace and pressure of work appears to be exacerbated by committee overload and inefficiencies. Excessive demands on time, during and after normal work hours, coupled with the ineffectiveness of some committees were concerns. Responses included:
  "We need to streamline the administrative responsibilities of the faculty. The [committee x] does not need 12 members."
  "[There are] too many committees. Issues repeat themselves."
  "It [committee x] is very nice, but not very effective. This is because all of the energy has been taken out by email protocols."

- *Work versus family/personal responsibilities*
  The pace and pressure of work are apparently compounded by, or related to, the stress of balancing work and family responsibilities. Responses from both women and men included:
  "This is an extraordinarily un-family-friendly environment."
  "What is hard are not choices between family and work, it is humanity versus work."
  "[My department] encourages an unhealthy attitude toward balancing your life and work."
  "This place is family neutral. That means family blind."

"This job structure is crafted for a bachelor existence."
"[We] need to think beyond a model of bachelorhood."
"My personal life is a nonentity now."
"Given the former [my career], I can do little with the latter [my personal life]. It just doesn't exist anymore."
"I try to have dinner with my kids, but that is not happening."
"This semester is crazy, with all the evening meetings and lectures. This week I won't see my family any nights. That pains me."
"There are days when I wonder if I am doing the right thing, if I am sacrificing my kids' education. I am sacrificing my own health and sleep. I work 80 to 100 hours per week and I got sick . . ."

- *Nondiscussability of family*
  On top of their difficulties managing work and family life, many respondents reported that family was not a discussable issue in their department. Women and men alike felt uneasy, stigmatized, or unable to discuss family issues openly within their department. Responses included:
  "In this department, children are a taboo subject. You don't talk about it in public."
  "No one talks about family issues. It is almost as if no one is married or has an outside relationship."
  "Family realities are not fully acknowledged in the department . . . I have to apologize for my family."
  "It is as if families do not exist . . . The message is it's your problem. No one told you to have a family."
  "When I say this [I can't make a meeting because of family], I get the feeling that the Department Head thinks this is not a valid reason, that he thinks, this is a choice that you made, and that's your problem".

- *Financial concerns*
  Several respondents raised concerns about their salary in relation to quality of life issues, for example, the high cost of living in Boston, and the high cost of childcare. Responses included:
  "I am worried about the financial aspects of this job."
  "Part of it is an economic issue. The salary gives us few options."
  "So the big thing is salary, not time."
  "The biggest problem is that there is not enough money for childcare."

<u>Gender-specific issues</u>
A number of strongly voiced gender issues emerged from the interviews. Some were departmental, some were school-wide. The main issues included:

- *Distribution of permanent chairs*
  Some senior women expressed unhappiness with the distribution of permanent senior chairs. They remarked that chairs always go to men or that the process of allocating chairs is not fair:
  "When permanent chairs come up, they have always gone to men."
  "The process of allocating chairs at the Institute level is not transparent, [it is] unobjective, and subject to personal influence."

- *Decision-making*
  Some senior women described a lack of influence or marginalization in key decision-making in their department. It is significant to note that women voiced this concern in spite of the actions of Department Heads to appoint women to important committees. It may be that committee membership is not enough to prevent

marginalization. Some women seemed to attribute their lack of influence to personal qualities. For example:
"I feel I have been unable to affect a lot of decisions. I'm not good at it."

Others attributed their lack of influence to departmental culture—in particular, to the existence of an unofficial, core group of male decision-makers:
"The core group [of decision makers] is the department heads and former department heads. They still have a tremendous amount of control and power, and they are all men. Even men who have not been department heads have more influence. Women can still be invisible in this department."
"There is a corrupt core of networking and social connections that run things. That corruption is fundamentally a guy thing."

Some senior men's perceptions of decision-making were equally strong as the women's. However, their feelings of inclusion are opposite to those of the women. These men described having great influence in decision-making. For example, one senior man remarked that:
"I have never felt the least bit excluded from the decisions I wanted to influence . . . I can't think of an instance in which I was disappointed, where I deserved to be heard and wasn't."
Another spoke similarly and confirmed the women's sense of an inside group of decision-makers:
"I always felt involved in departmental decision making. I never felt on the outside . . . If you are an insider in the department, you are involved in decision-making."

- *Gender climate*
  The final interview question, concerning the general climate for women and men at MIT, elicited strong responses from many respondents. Women and men described definite, but not easily definable, differences in the climate for women and men.

  Some women said it is *subtle*:
  "There is a gender problem, but it is hard to define. …It's very subtle."
  "There are the subtle things, when I unexpectedly face a stereotype."

  Some women described *difficulties being heard*, especially in meetings:
  "I have found that you need to be loud and assertive to survive . . . Some might think I was bossy."
  "I go out of my way not to ask for things. My personal needs should not be seen as a sign of weakness. I am very aware I am in a male-dominated world."
  "At faculty meetings, if I make a point and a man makes a point, a man will follow up by saying, 'as [male X] said . . .' It is not deliberate, it is unconscious."
  "At meetings the guys talk. When it comes to me to make comments, they say 'it's time to move on'."
  "If a woman is on a committee, the men think they can break in when she is speaking."
  "Maybe I am less articulate and less able to get my needs across than others, or maybe as a woman I do it in a different way."

  Some women described *feeling invisible* or having *low statu*s:
  "There is an invisibility of women within projects. If you work with a man, your work is not recognized. It happens all the time."
  "As a woman at meetings at MIT, I feel like a second class citizen. But I don't know if it is because I am from [my department], which has low status, or a women."

Some women described *biases in search and hiring*:
"They say they want to attract women and minorities, but men always pop up on top."
"It bothers me when it comes to appointments. You have a mediocre guy and a woman. When they talk about the guy, they talk about his degrees. When they talk about the woman, they say she hesitates when she speaks, that she's too heavy, that she won't fit."
"If they [the men] decide to hire a woman, they can pull it off. But a woman can't do that for another woman."

Some male respondents supported the women's views that gender makes a difference at MIT. They corroborated women's remarks and felt that women were at some disadvantage. Men said, for example:
"Having a heavy concentration of men at the top contributes to the problem. We need the will to hire women. But if men are making the decision it's a closed decision . . . The default is to hire a man."
"The real problem is that there are not enough women."
"Things are different for men and women. Part of my sense that this is true comes from what I observe or hear about how women faculty are engaged in the department. More is just what I sense."
"To succeed, you have to scream and yell. In search, there is a lot of horseplay, and women may find this harder to do."
"Men excused the decisions [regarding denials of tenure for women] because they were talking about women."
"There is not such an enormous amount of discrimination that a woman genius could not get tenure. But what about the others? Politics etc. can play a big role with them. There women are at a disadvantage."
"Yes, there are ways that MIT treats men and women differently. Some are unconscious."

- *Gender climate at MIT relative to other places*
  When asked about the general climate for women at MIT, most respondents (women and men) said that MIT is probably a better place to be than other universities. But some thought that MIT should be doing even better. Responses included:
  "It is pretty good compared to other places."
  "Overall, however, it is pretty good. It is pretty good compared to other places."
  "With respect to [number of tenured women] in other schools, we are doing very well."
  "MIT is pretty bad on the women's side, but it may be worse at other universities . . . I have never felt that the Institute wanted to solve the problem. The trouble is the Institute provides carrots, but it leaves the discretion with individual departments."

5.3 Summary and Recommendations

Each of the three departments has a unique culture with different women and men faculty profiles. However, many issues raised in the interviews cut across the three departments and across gender. Ambiguities and inadequacies in mentoring were a shared concern. There were pressing work and family, pace and pressure issues common to women and men.

Issues specific to women were voiced very strongly and unequivocally. Some are similar to issues raised by women in the School of Science interviews. The issue of marginalization is important to understand and to watch. The School of Science report found that the marginalization of women faculty increased as women progressed

through their careers at MIT. Most of the senior women in our School are newly senior. Departments should be proactive in creating a climate for women in which marginalization disappears, or never materializes, for new senior women as they move on in their careers. A good working climate for women can only help in the recruitment and retention of women, thereby increasing the numbers of women, which in turn may lessen or prevent problems of marginalization. A good working climate for women requires that all issues of concern to women regardless of whether they apply to men, be dealt with.

The committee makes the following recommendations.

Brief Department Heads on Interview Findings

- The implementation of our recommendations depends on the active involvement of the Department Heads. The Dean should brief Department Heads on the findings for their departments so that they can better understand issues of concern to their women faculty.

Establish Effective Departmental Mentoring Practices

- Departments should review their current and past mentoring policies and practices. New mentoring practices should be established that offer *alternatives* for faculty with different preferences or needs—for example, tenure workshops, individual mentors, mentors from outside a department, group reviews, and so on. Mentoring is especially important in Architecture and DUSP—departments with histories of low tenure rates for women.

Increase Participation of Women Faculty in Departmental Decision-Making

- Junior women (and men) faculty in all three departments reported feeling excluded from important department decisions. Department Heads should work toward achieving a balance between overloading junior faculty with committee responsibilities and excluding junior faculty from important departmental decisions. Senior faculty should monitor the balance between committee involvement and exclusion for the junior faculty they mentor.

- Senior women reported a lack of influence in key decision-making, and that decisions are made by an inside group of men.

  Department Heads should take steps to prevent the division of faculty into "insiders" and "outsiders", or, at least, lessen perceptions of such a division. Women should continue to be asked to chair or be members of influential department committees. These committees should be the actual settings for decision-making, and not facades for decisions carried out by a few individuals in private meetings, or by the Department Head. Follow-up actions by committee chairs on decisions made in meetings should be reported openly to all committee members so that members know that their inputs are effective and valued.

  People differ in their styles of communication—gender may play a role in these differences. Committee chairs and Department Heads should make efforts to solicit, listen to, and acknowledge contributions of women.

  Women Department Heads and administrators are rare at MIT. No woman faculty has headed a department in our School, or held an administrative position. The

Dean should make efforts to find capable and qualified women to serve as Department Heads and administrators.

Make Changes to Incentives and Rewards Systems at the Institute, School and Department Levels

- Some junior women (and former junior women, see section 2.5, Junior Faculty Exit Interviews) reported very positively on the Provost's annual research fund. Currently, the award is available only for women hired in open positions. One target-of-opportunity woman reported that her negotiations faltered when she learned she would not get this award. The Institute should consider giving this award to all new women faculty.

- Women (and men) reported concerns with the openness and the distribution of incentives and funding. Department Heads should actively and openly inform faculty of the availability of departmental resources, perhaps on a regular, annual basis. Department Heads should actively find and encourage eligible faculty to apply for awards. Information on funding and awards for junior faculty should be given in mentoring or tenure workshops.

- Senior women were dissatisfied about the allocation of permanent chairs. The Dean and Department Heads should work with the Institute administration to find permanent chairs for senior women in the School.

Reduce the Stress of Balancing Work with Family/Personal Responsibilities

The pace and pressure of work, and the difficulties of accommodating both work demands and family responsibilities were major concerns in all three departments. For some women (and men), these difficulties are apparently exacerbated by outside practice responsibilities, committee overload and inefficiency, financial concerns, and the inability to discuss family issues openly.

- Department Heads should streamline committees, wherever possible, and appoint effective chairs. Committee chairs should make efforts to schedule meetings during normal working hours so that faculty with families can attend easily.

- The challenges of balancing work and family/personal demands can be alleviated by creating an atmosphere in which family/personal responsibilities can be discussed comfortably in a department. This atmosphere can be created from the bottom up, beginning with an awareness, within departmental program groups or discipline areas, of the family/personal responsibilities of its members. Recognition of the family/personal responsibilities of faculty within small groups can then be transferred up to the level of the full faculty, and to departmental councils or steering committees.

- The Institute should consider making some financial contributions toward childcare to relieve some of the financial burden on faculty with children. Even a small contribution might have a disproportionately positive effect in terms of symbolic value.

- In the Architecture department, the triple demands of an outside practice, an academic career, and a family are difficult or impossible to manage, especially for junior faculty. The Dean, the Department Head, and senior faculty should review this problem and make every effort to find solutions.

- We repeat here our recommendations from the previous section on Faculty Numbers:

  Department Heads should communicate to all faculty, on a regular basis, clear and accurate information about the new Institute family support policies. Department Heads should openly support women, and men as applicable, who use these policies, in order to avoid potential stigmas resulting from the use of these policies.

Create a Productive Climate for Women Faculty

Women (and men) in all three departments felt that the climate for women is different than that for men, usually to the disadvantage of women. Many differences are subtle and seemingly unconscious. We repeat here our recommendations from the previous section on Faculty Numbers:

- The climate for women faculty will be likely improved if the recommendations above and those given elsewhere in this report are implemented.

- The climate of a department is dependent in part on the attitudes and actions of the Department Head. The Department Head should communicate to the faculty, and to senior male faculty in particular, that gender bias will not be tolerated and that the department will be fully supportive of its women faculty. However, in the end, the climate of a department is the responsibility of all faculty. The dissemination of the results of this study to faculty, together with regular, formal reassessments and public discussions of the status and treatment of women faculty, should help educate all faculty about important gender issues. All faculty may then be more willing and able to create a productive climate for women faculty.

6 Conclusions

Our study of the status and equitable treatment of women faculty in the School identified several areas where women faculty were at a disadvantage. We found inequities in all four parts of our study—in numbers, salary, recognition and resources, and experience. Some of these inequities were substantial.

We offer no explanations for the inequities we found. Some may have come about through inattention or ignorance, others through insensitivity or inappropriate expectations. Some inequities may be the result of conscious bias. Though we lack explanations, it is still possible to eliminate inequities and to improve the status of women faculty.

Some inequities relating to the numbers of women faculty and to women's salaries are relatively straightforward to fix. Our recruitment data suggest that women want to join the faculty here. If this is so, then we need to work harder to find women and to offer them positions here. And, if the increasing percentage of women students in our School (now close to 50% at the graduate level in two departments) is indicative of a national trend, then the pool of potential candidates for women faculty should not be a problem. Salary inequities can be corrected at the level of the Dean. Ways of improving the status of women may be less straightforward, though many problems would likely disappear with more women on the faculty. The status of women faculty can also be improved by educating all faculty on important gender issues and changing the attitudes of faculty.

Our report ends with data from the academic year 2001. This academic year (2002), more women have been appointed to the faculty, and offers to women are now being made for appointments next year (2003). In all three departments, the proportions of women faculty have improved. In Architecture and in DUSP, the proportions of women faculty have this year, or will next year, exceed 25%. This is good news. However, we caution against undue optimism. Our data from the past dozen years show periods of short-term improvements. Years of growth in the numbers of women were followed by years of decline. In 2001, we were back to where we started in 1990. We need to implement policies that will guarantee permanent improvements, and we need to be vigilant in monitoring progress.

The focus of this report is the status and treatment of women. However, from our interviews we found serious problems of concern to men and women faculty alike. These problems are difficult to ignore. Quality of life issues (for example, excessive work demands, and difficulties balancing work and family responsibilities), mentoring, and the distribution of incentives were issues important for both men and women. These issues should be followed up in an initiative separate from this one.

Our concluding recommendations are:

Brief Department Heads and Faculty on this Report

- Real and lasting improvements will begin by educating all faculty about the important gender issues and inequities we identified in this report.

Establish a Committee to Work Out the Details and Implementation of Our Recommendations

- Some of our recommendations are general, and need further elaboration. A committee should be charged with working out the details of our recommendations and their implementation, in consultation with Department Heads and the Dean. This committee should also be responsible for tracking the progress of gender equity in the School, with the aid of a review system as suggested below. The Committee on Women Faculty could be made a standing committee for this purpose.

Establish a Permanent, School-wide System to Review Gender Equity on a Regular Basis

- A permanent review system should be established to assess gender equity in the School on a regular basis—perhaps every 3 to 5 years. This system should be mandated at the Institute level, and not subject to the discretion of changing Deans or Department Heads. Many of the analysis methods used in this report could be part of a regular review system. Reviews should be made available to the faculty and discussed. To help with these reviews, the faculty database created for this report should be updated yearly.

Establish Policies for Rewards and/or Sanctions for Departments that Show Improvements/ Decline in Gender Equity Issues

- Some incentives for improvements in gender equity already exist. The Provost's annual research fund is one example. Additional rewards, or perhaps sanctions, should be devised as incentives for departments to improve the status and treatment of their women faculty.

7 List of Recommendations

Faculty Numbers

- Find and Hire More Women Faculty (p. 32)
- Mentor and Promote Junior Women (p. 33)
- Recognize Family Responsibilities (p. 33)
- Create a Productive Climate for Women Faculty (p. 33)

Salary

- Review and Correct Inequities in Current Faculty Salaries (p. 39)
- Establish a School-wide System for Monitoring Salary Equity (p. 39)

Recognition and Resources

- Continue to Track HASS Awards (p. 46)
- Find Permanent Chairs for Senior Women (p. 46)
- Appoint Women Faculty to Institute Committees (p. 47)
- Monitor Space Allocations and Correct Inequities (p. 47)

Faculty Experience

- Brief Department Heads on Interview Findings (p. 56)
- Establish Effective Departmental Mentoring Practices (p. 56)
- Increase Participation of Women Faculty in Departmental Decision-Making (p. 56)
- Make Changes to Incentives and Rewards Systems at the Institute, School and Department Levels (p. 57)
- Reduce the Stress of Balancing Work with Family/Personal Responsibilities (p. 57)
- Create a Productive Climate for Women Faculty (p. 58)

General

- Brief Department Heads and Faculty on this Report (p. 59)
- Establish a Committee to Work Out the Details and Implementation of Our Recommendations (p. 60)
- Establish a Permanent, School-wide System to Review Gender Equity on a Regular Basis (p. 60)
- Establish Policies for Rewards and/or Sanctions for Departments that Show Improvements/ Decline in Gender Equity Issues (p. 60)

Report of the School of Engineering

Reports of the Committees on the Status of Women Faculty

March 2002
Massachusetts Institute of Technology

Statement from the Dean of the School of Engineering

Embracing Gender Diversity

For most of history, Anonymous was a woman.
—*Virginia Woolf*

In my youth, I was surrounded by engineers. My father worked for the engineering division of a large chemical company and I had many opportunities to watch him and his colleagues at work and at play. I have long held two impressions of those days. First, engineering seemed exciting: engineers were developing new chemicals, introducing new processes, and launching new equipment, new plants, and new products. They had opportunities to work on interesting, challenging problems. They were truly engaged in their work and seemed to be having fun. My second impression was that engineering was for everyone. I saw no barriers. If you had talent, interest, and the right training, then engineering could be for you.

Now as I look back on those days, I realize that I was wrong. Not about engineering being exciting. It was exciting then, and it is even more exciting now. But engineering, it seems, was not for everyone. All the engineers I knew were white men. Clearly, barriers did exist.

Today engineering does attract women and it does attract minorities, but not enough of either. Barriers persist and all too many of us remain oblivious to them.

In the wake of the noted MIT Women Faculty in Science report, in the Fall of 1999 I convened a similar committee to assess the situation in engineering. The enclosed report summarizes the Committee's findings. Some of these findings are heartening. MIT engineering has about sixty-five percent more women undergraduate students, twenty percent more women graduate students, and twice the fraction women faculty as the national average. Women faculty performance is comparable to that of men (e.g., tenure rates, time to promotion, percentage of faculty with chairs). Women are compensated equally with men.

But some of the Committee's other findings are very disturbing. Many of our women faculty, and especially the senior women, feel marginalized. We learn, for example, about some of our women faculty colleagues, who despite their superb professional standing and despite the fact that they are highly valued by their faculty colleagues, have *never* been asked to serve on the Ph.D. committee of even one of their colleagues' students in their own research area. Stunning. We learn that women faculty candidates reject a far greater percentage of our faculty offers than male candidates. And, we learn that on a percentage basis, we make about half as many offers to our female Ph.D. graduates as we make to our male Ph.D.s. In sum, we learn that there is bias and that MIT is not a hospitable environment for many women faculty.

Simply put, this situation is unacceptable. The strongest, most resilient human systems exhibit the highest degree of freedom, opportunity, and diversity. For the sake of the engineering profession, for MIT's sake and, quite simply, because it is the right thing to do, we should and we must do better. I ask each of my male colleagues at MIT and elsewhere to try to put themselves in the position of our women colleagues. How would you react in similar circumstances? How would you feel about your environment if you were subjected to such behavior? What kind of signals would you be sending to your students if you felt thus marginalized?

In the past decade we have doubled the percentage of women faculty in engineering at MIT. I am firmly committed to doing so again in the decade ahead. I am also committed to making MIT a more welcoming environment for women faculty. We need to educate ourselves about the current situation and about the gender biases that we all hold, women and men alike. We need to put in place administrative processes to promote the objectives we seek and to monitor our progress. But, most importantly, we need to ensure that developing a more diverse community, in both gender and race, remains a high priority. We have begun down this path, but we have much more to do.

In closing, I would like to thank the members of the Committee on Women Faculty in Engineering, and especially its chair, Professor Lorna Gibson, for the significant time and energy they have devoted to this important task and for the forward looking, constructive perspective that has characterized our interactions during the development of the report. You have done an enormous service for the School and Institute and, I hope, more broadly for the academic engineering enterprise.

Thomas L. Magnanti
MIT Dean of Engineering
January 15, 2002

REPORT OF THE COMMITTEE ON WOMEN FACULTY IN THE SCHOOL OF ENGINEERING AT MIT

March 2002

Mary C. Boyce
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This report was written with the assistance of Martha Nichols.

EXECUTIVE SUMMARY

Academic leadership can both implement policy changes as well as foster a change in the culture of the institution. Following the 1999 publication of the report on gender inequities in MIT's School of Science, the Dean and senior administration at MIT not only acknowledged the problems but addressed them in concrete ways.[i] In addition, the President and Provost called for the formation of similar committees in the other four Schools at the Institute (Architecture and Planning; Engineering; Humanities, Arts and Social Sciences; and Management) and the Provost created a Council on Faculty Diversity.

The Committee on Women Faculty in the School of Engineering was asked to assess the status and equitable treatment of women faculty in the School through data collection and interviews. The Committee found similar patterns to those described in the School of Science report: low numbers, past salary discrepancies, marginalization and problems in balancing work and family responsibilities.

This report summarizes the findings of the Committee and the institutional changes that MIT is implementing to address the issues.

Faculty Hiring and Retention

The percentage of women faculty in the School of Engineering increased from 5 percent in 1990 to 10 percent in 2001. While the percentage has doubled, it is still small. Overall, hiring in the School has been in line with the percentage of women awarded PhDs in engineering at our peer institutions, from which MIT hires.

[i] The Dean of Science, working with the Department Heads, took action to address the findings of the Committee on Women Faculty in the School. He hired more women faculty (increasing the percentage from 8 to 13 percent), increased the salaries of some women faculty and addressed individual issues of space, resources and outside offers. The inclusion of women in influential departmental activities has also increased.

The committee found two particular areas of concern with regard to hiring:

- The two largest departments in the School, which account for half the faculty, had a net gain of only two women over almost a decade. Between 1990 and 1998 one of these departments hired 28 men and 0 women. The other department lost one of the two women it hired in the late 1980s and failed to retain any of the other three women hired during the 1990s.

- There were disparities in the hiring patterns between men and women: for instance, men with PhDs from MIT were hired onto the faculty at almost twice the rate as women with PhDs from MIT.

There are some signs of progress: the number of women faculty has increased from 31 in 1999 to 34 as of September 2001. Three additional women have already accepted faculty positions to begin during the 2002 calendar year; one of these is tenured. The department that hired no women over an 8-year period has hired 3 women since 1999, two with tenure. In addition, the tenure rate and time for promotions are similar for women and men.

In response to the Committee's findings, the Dean of Engineering has enforced the affirmative action policy more strictly, personally reviewing applications from women candidates and turning back proposals to hire specific candidates from departments that have not searched sufficiently for women or given appropriate consideration to women candidates. The Dean has also agreed to a target of women making up 20 percent of the faculty in the School of Engineering by 2010.

The Council on Faculty Diversity is developing guidelines for faculty searches outlining appropriate search procedures. The Provost has developed standards for faculty searches that include diversity on the search committee, broad searches and justification of the candidate selection (including describing the relative merits of the candidates, especially women and minorities). The Provost's standard indicates that searches that identify no women or minority candidates should be viewed skeptically by the Dean.

Compensation

The salaries of women and men on the faculty in Engineering are comparable at the lower ranks. A number of senior women report experiencing unexplained salary jumps at various times which they believe were made to make up for past inequities. (It appears that small differences, compounded over a number of years, produce differences that are large enough to be noticed and are then corrected.) Faculty salaries are now being reviewed by one or more members of the Committee on Women Faculty in each School.

Compensation also includes benefits. The very different demographics of the women faculty lead to inequitable subsidy of benefits such as health insurance and the Children's Scholarship Program that provides tuition for the children of faculty. One potential benefit that many women faculty need and is not currently subsidized is child care. The Council on Faculty Diversity is planning to review options for modifying the benefits plan.

Marginalization

Marginalization is manifested in a variety of ways. In our interviews with women faculty, we heard of women not being included in research activities (e.g., participation in group research grants or PhD thesis committees) and in departmental activities (e.g., women never being invited to give a presentation at annual departmental retreats; lack of representation on influential committees). Some women noted that they were asked to teach lower level undergraduate subjects rather than specialized graduate subjects relating to their own research. Some were asked to change their teaching assignments more often than their male peers. A few women reported no feelings of marginalization; they felt that they had been appropriately included on key committees. One woman in particular felt that MIT worked hard to give her more opportunities for visibility than her male counterparts.

Marginalization also compounds over time: for instance, women who are not invited to be on influential departmental committees do not develop the experience needed to move on to higher level administrative positions. At the start of the study the Committee found that there were few women in line academic leadership positions - with only one woman on the Engineering faculty in such a position (and that program was not in the School of Engineering). Currently,

there are three women in Engineering in line academic leadership positions. In addition, three women on the Engineering faculty now have non-line positions with substantial administrative responsibility.

The role of the Department Head in ensuring that women participate fully and fairly in the departmental activities is crucial. Addressing the marginalization issue is perhaps the most difficult of all as it occurs on the level of individuals, in many cases unconsciously. As one step, the Dean is sponsoring a workshop on gender schemas and marginalization of women for Engineering Council (made up of all the Department Heads and the Directors of some of the larger Centers in the School). The Council on Faculty Diversity is considering ways of addressing marginalization.

Work and Family Issues

Almost all of the women we interviewed spoke of the difficulties in balancing work and family responsibilities. Roughly half of the women faculty in the School of Engineering do not have children; among the tenured women faculty the percentage decreases to about 40%. About 20% of the men on the faculty at MIT reported that they did not have children in the last MIT survey on family and work. At the time the Committee began its study, family leave policies varied throughout the Schools at MIT. In Engineering, faculty were allowed one semester release from teaching and administrative duties at full pay to spend time at home caring for a new child. In December of 2001, MIT adopted two policies designed to address some of the issues associated with balancing work and family: extension of the tenure clock for childbearing (and, by request, for adoption) and part-time appointment with tenure for family care. MIT is also increasing the on-site day care facilities: the new child care center in the Stata Center currently being constructed will accommodate 73 children beginning in January 2004, to bring the total number of day-care slots to 132.

INTRODUCTION: How the Committee Formed and Why Its Findings Matter

"*A number of my colleagues dismissed the value of my work even though it was crucial to the work of other faculty*." --- Comment from a senior woman on the faculty.

In March of 1999, the Committee on Women Faculty in the School of Science published a report in the MIT Faculty Newsletter describing their study on gender inequities in that School and the response of the MIT administration to their findings. At a meeting of the women faculty in the School of Engineering shortly after the Women-in-Science report was issued, the vast majority of participants called for a similar investigation into the status of women faculty in the School of Engineering. The Dean of the School, Thomas Magnanti, approved such a study and in the fall of 1999, the Committee on Women Faculty in the School of Engineering was formed. The findings of that study, as well as MIT's efforts to address the gender inequities uncovered, are summarized in this report. The Committee was asked to assess the status and equitable treatment of women faculty in the School through data collection and interviews; to make proposals to increase the proportion of women faculty in the School; to act as a resource for the Dean of Engineering and department heads on issues that concern women faculty in the School; and to act as a resource for the MIT community about these issues for the Institute at large. Of the seven Committee members, five are tenured women faculty from five of the eight departments in the School of Engineering; two are tenured male faculty who are current or former administrators in the School.

In brief, the findings of the Committee reinforce those of the Women-in-Science report. Consider the following examples:

- The two largest departments in the School of Engineering , which account for about half of the faculty in the School, had a net gain of only 2 women faculty between 1990 and 1999.

- From 1990 to 1998, one department hired 28 men and no women.
- In another department, women are rarely on faculty search committees; a female professor in this department reported that during faculty searches, she was only asked to talk with a candidate if that person was a woman.
- When we started our study in 1999, there was only one woman faculty member in the School of Engineering in a line position of academic administrative leadership and she ran a program that was not in the School of Engineering. The only other woman who had ever held a line position of academic administrative leadership in the School of Engineering did so in the early 1970s.
- There is evidence that inequities in compensation for women faculty existed in the recent past. Over half the women full professors received substantial increases in their salary following a request for a salary review in 1995. Women faculty still receive substantially less subsidy of their benefits than male faculty.

Most important, just 10% of the School of Engineering's 2001 faculty are women. These low numbers mean women faculty remain outsiders or tokens in their departments. Yet this is not just a pipeline problem. The Committee also found that a much higher percentage of female job candidates reject offers to come to MIT - 40% of women as compared with 14% of the men offered jobs. Given MIT's status as one of the premier research universities in engineering in the world, these results are disturbing.

In November 2000, the Committee submitted its first confidential report to the Dean and other administrators. The report included recommendations for hiring of women faculty, increasing the number of women faculty in academic administrative leadership positions, ensuring equity in compensation, improving the environment for women faculty and addressing family/work issues. By that time, positive changes to address gender inequities were already underway. For instance, a number of women in the School of Engineering had already received salary adjustments. Dean Magnanti insisted that qualified women be considered during faculty searches and urged departments to nominate women faculty for awards. Since the November 2000 report, the administration has begun acting on a number of the recommendations. Here, we

summarize the findings of the committee, list the recommendations and describe the progress made to date in implementing them. Gender inequities that have existed for decades are difficult to eradicate without an institution's sustained commitment over many years. Still, documenting what has occurred is a useful place to start, and can lead to the kinds of changes that eventually create an equitable working environment for all.

BACKGROUND: WOMEN IN SCIENCE LEAD THE WAY

The discrepancies in treatment of male and female faculty have much more to do with small, unconscious biases than blatant sexism. In many cases, male faculty are simply unaware of the ways in which these inequities occur on a daily basis for their female colleagues. Yet there is strong evidence that they do occur.

The main finding of the 1999 Women-in-Science report, which was based on data and interviews with women faculty and department heads gathered over the previous four years, was a progressive marginalization of women faculty members in the School of Science as as they moved through their careers. According to the report, marginalization during the period studied was often accompanied by "differences in salary, space, awards, resources and response to outside offers between men and women faculty with women receiving less despite professional accomplishments equal to those of their male colleagues."

The findings presented in the Women-in-Science report, as well as those for the School of Engineering, are consistent with a number of studies documenting how women are undervalued in academia. Virginia Valian's (1998) book *Why So Slow?* describes the ways in which gender schemas, or implicit hypotheses about sex differences, lead to inequities in the evaluation of the accomplishments of men and women. Even small differences in evaluation and treatment effectively "compound" over the course of a career, leading to large disparities for individuals at later stages in their careers.

Take one recent study, in which a curriculum vita was distributed to two groups

of faculty from the same field throughout the United States who were then asked if they would hire the candidate (Steinpreis *et al.*, 1999). Both groups had similar numbers of male and female faculty. All copies of the curriculum vita were identical, except that half had a man's name while the other half had a woman's. Fewer than half the faculty who reviewed the woman's curriculum vita said she should be hired, while nearly three-quarters of the faculty who reviewed the man's curriculum vita said he should get the job. Strikingly, it wasn't just the male faculty members who favored the male candidate. There was no statistically significant difference in the evaluation of the curriculum vita by male and female faculty. These and many other studies demonstrate the power of unconscious bias in evaluation processes, with bias usually working to the disadvantage of women.

Given how endemic such biases are, the efforts of the MIT administration to address gender inequities, as well as the impetus provided by the Committee on Women Faculty in the School of Science, are notable. The Women-in-Science report has had a remarkable impact. At MIT, the Provost, in collaboration with the Deans, supported similar "gender equity" committees in the other four Schools, including this committee in Engineering. In addition, the President established a Council on Faculty Diversity to address issues pertaining to the under-representation of both women and minorities on the MIT faculty. Professor Nancy Hopkins, the first Chair of the Women-in-Science committee, has been appointed Co-chair of the Council on Faculty Diversity and now sits on Academic Council. The Women-in-Science report has also had a broader impact outside of MIT, generating widespread press. A number of other institutions are now undertaking their own gender-equity studies. Professor Hopkins has given talks on gender-equity issues at dozens of universities, at the White House and at the California State legislature.

As the Women-in-Science report emphasizes, "*This collaboration of faculty and administration could serve as a model for increasing the participation of women, and also of under-represented minorities, on the faculty of other Schools at MIT. This is an*

important initiative since, even with continued effort of this magnitude, the inclusion of substantial numbers of women on the Science and Engineering faculties of MIT will probably not occur during the professional lives of our current undergraduate students." On reading the Women-in-Science report, MIT President Charles Vest commented **"***I have always believed that contemporary gender discrimination within universities is part reality and part perception. True, but I now understand that reality is by far the greater part of the balance.*"

THE FINDINGS IN ENGINEERING: Low Numbers Underlie Other Problems

The Committee on Women Faculty in the School of Engineering completed its study in November 2000. The Dean's office provided extensive personnel data, allowing committee members to examine the number of degrees granted to women and men, number of female and male faculty, hiring of faculty, years from doctorate to tenure decision, tenure success, time for promotion, compensation, and committee assignments. Most of the data covers the 1990s, but some go back as far as 1981. During the course of the study, committee members interviewed almost all of the female faculty members in the School of Engineering. Since November 2000, the Committee has updated certain figures, and the most recent available appear in this report.

The Committee's quantitative findings are summarized below, including the number of women faculty, hiring patterns, women in academic leadership positions, promotion and tenure, compensation, benefits/demographics, and outside professional activities. The interviews conducted with women faculty provide additional qualitative findings.

Numbers of Women Faculty

In July 1990, there were 17 female professors with primary appointments in the School of Engineering out of a total of 357 faculty, or 4.8% women. As of September 1, 2001, there are 34 female faculty out of a total of 348, or 9.8%. Although this doubles the percentage, the number of women faculty remains strikingly low. The conventional explanation for the scarcity of female faculty in the "male" discipline of engineering is that not enough qualified female candidates are in the pipeline. Yet the pipeline is growing, at least in a limited fashion. For instance, at MIT the percentage of PhD degrees in engineering awarded to women grew from 13% in 1990 to 18% in 2000, averaging 15% over that period (**Fig. 1**). The fraction of PhD degrees awarded to women at peer institutions, such as Stanford, Berkeley, and Caltech, was similar in 2000 (18-21%).

Hiring of women faculty in engineering at MIT has been consistent with these numbers: 14% of the faculty hired between 1990-1999 were women. However, closer examination of the data reveals variability between departments. From 1990-1999, there was a net gain of 12 women faculty in the School of Engineering. During this period, three mid-sized departments (Chemical, Civil and Environmental, and Materials Science and Engineering) accounted for 9 of the net gain of 12 women faculty in the School. All three department heads made a commitment to hiring women faculty. But the two largest departments, Electrical Engineering and Computer Sciences (EECS) and Mechanical Engineering (ME), which together account for roughly half the faculty in the School, added only 2 of the net gain. The percentage of PhD degrees awarded to women in these two fields in 2000 at MIT, Berkeley and Stanford, the schools from which MIT's School of Engineering hires most of its faculty, was 14% and 16%, respectively. Between 1990 and 1998, EECS hired 28 men and 0 women. Within EECS, faculty are associated with a Laboratory; the Laboratory for Computer Science did not add any women in EECS between 1983 and 1999. It should be noted that the situation in EECS has improved considerably since 1998. Three women have recently been hired, two tenured and one

untenured. A fourth woman recently transferred from another department to EECS.

In Mechanical Engineering, however, while women have been hired onto the faculty, only one of the five ever hired up until 2001 is still at MIT. The first woman was hired by the department in 1987 and is now a full professor with an endowed, 5 year, chair in the department. All of the other four women hired between 1987 and 2000 have left MIT. Mechanical Engineering hired another woman faculty member in 2001.

Hiring Patterns

In addition to low numbers and variable hiring rates in departments, the Committee found a number of gender-based differences in the hiring pattern of faculty within the School of Engineering. Between 1986 and 2000, 64% of the men hired obtained their PhDs at MIT, Stanford, or Berkeley, while only 33% of the women hired obtained PhDs at these three schools. The data suggest that the School is much less successful in recruiting women than men from top engineering schools.

The discrepancy between male and female MIT PhDs who are hired by the School is particularly telling. Between 1986 and 2000, 43% of the men hired had MIT PhDs, while only 21% of the women did. Between 1990 and 1999, the School of Engineering granted 2,025 PhD degrees to men; 40 of these men were hired as faculty, representing 2.0% of the pool of male PhDs. During the same period, MIT granted 351 PhDs degrees to women; 4 of these women were hired as faculty, representing 1.1% of the pool of female PhDs. While the School of Engineering's overall hiring rate for women matches the national percentage in the pipeline (14%), the School is not taking advantage of the available pool of women within MIT.

The Committee also compared the acceptance rates of faculty offers for men and women. Between 1981 and 1999, 14% of the men and 40% of the women rejected an offer of a faculty position at MIT: women reject our offers at almost 3 times the rate that men do. For example, during the 1990-1998 period when no women were hired in EECS,

four offers were made to female candidates but all were rejected. Clearly, MIT faculty positions are less attractive to women than to men. In fact, very few of the women currently on the faculty who did their PhDs here were initially enthusiastic about joining MIT. One told the Committee *"when I finished my PhD at MIT, I didn't think of becoming a professor: my academic advisor looked too stressed out and I didn't want an academic job initially"*. Interviews with the women faculty suggest a number of reasons why: family considerations, problems with relocating because of a partner's career, the high stress associated with an MIT faculty position, and the difficulty in collaborating with colleagues at MIT. More research is needed to understand what role outside societal factors, as well as internal MIT factors, play in candidates' decisions to accept or reject faculty positions at MIT.

Women in Academic Leadership Positions

When the Committee's study began in the fall of 1999, only one woman in the School of Engineering held a line academic administration position and that woman was co-director of a program that was not in the School. These positions include the Provost, Deans, Department Heads, and some Lab and Center Directors. That one woman made up 2.6% of these positions at a time when 6% of the full professors in engineering were women.

In the last two years, however, the number of women in such academic leadership positions has increased dramatically. Three currently have line academic administration positions. Two now sit on Engineering Council and one sits on Academic Council. In addition, three other women in the School have been appointed to positions with substantial administrative responsibilities.

Promotion and Tenure

The pattern of promotion and tenure for women on the engineering faculty is

similar to that for men. From 1986 to 2000, the length of time from PhD degree to a tenure decision was 9.4 years for men and 9.2 years for women. The tenure success rate is also similar: 46% of men and 50% of the women hired between 1977 and 1993 in the School were tenured. In addition, women are promoted to full professor more quickly (4.3 years for women versus 5.4 years for men).

Compensation: Salary

The Committee had access to a plot of salary versus age, by gender, indicating the different ranks of faculty. On average, the salaries of male and female faculty were similar at a given rank. However, the Committee noted that a number of corrections had already been made to women faculty's salaries. In late 1995, the tenured women had concerns about salary inequities and requested a salary review. Data for the percentage increases of the women who were full professors (in departmental faculty, rather than in line academic administrator, positions) from 1990-1999 indicated that over half of them had received significant increases in their salaries in the two subsequent years. In addition, a more detailed review of the salaries of individual women and men of similar rank and age by the Chair of the Committee and the Dean in the spring of 2000 resulted in a small number of women, at various levels, receiving additional salary increments.

Several of the more senior women on the faculty indicated that at various times in their careers at MIT they had received substantial increases in their salaries, or "out-of-season" increases not associated with a promotion or tenure which were thought to make up for past inequities. For example, this committee had access to one female full professor's salary increases over the course of more than 20 years. The data indicate that she received a 17% increase the year she was promoted from Assistant to Associate Professor, including the additional salary increment (typically 7%) associated with the promotion. The following year, when there was no raise associated with promotion, her salary increased by 16%. The same pattern occurred at promotion from Associate to Full

Professor: the year of the promotion her raise was 16% and the following year it was 15%. Later on in her career, she received an "out-of-season" raise, mid-year, out of the normal salary cycle. A second senior woman told us that at three times in her career she had also received remarkably large increases in her salary, which she thought were to make up for past inequities.

Together the data suggest that salary inequities have occurred in the School of Engineering. The need for sudden corrections could be due to the chronic undervaluation of female faculty. The correction is made when someone, such as a new department head, notices a discrepancy. This represents good faith on the part of MIT, but individual salary adjustments do not address all discrepancies in compensation, nor do they account for the full loss of salary (eg. backpay, retirement contributions).

Compensation: Benefits and Demographics

In 1989, 82% of the male MIT faculty had children compared with 53% of the female faculty (Final Report of Ad Hoc Committee on Family and Work, 1990) . As of Spring 2000, 52% of the School of Engineering's female faculty had children - essentially no change from the Institute's percentages of ten years before - and the number goes down to 42% for the School's twelve untenured women. (The U.S. Census Bureau reports that nationally 82.5% of women aged 40-44 have borne a child). While MIT's current benefits plan was designed for the traditional family and addresses their needs extremely well, it does not do so for many women faculty.

Data for two benefits illustrate the situation. In 2000, MIT subsidized medical insurance by roughly $1,900/year for an individual subscriber and $4,700/year for a family. In 2000, 49% of the women faculty were individual subscribers (compared with 21% of the men); 35% of the women faculty were family subscribers (compared with 72% of the men). In addition, 17% of the women faculty (compared with 7% of the men) didn't make use of the medical benefit at all, presumably because they were insured under

the plans of spouses or domestic partners. The net effect was that, on average, men were subsidized $1,400/year more than women. (**Fig. 2**).

Another benefit, the Children's Scholarship Program, contributes to college tuition for children of faculty. Institute-wide data provided by the benefits office indicate that in a typical year, male faculty receive 97% of this benefit. Note that the amount of the subsidy is quite significant: for example, a faculty member with two children who attend four year college or university programs, can expect to receive over $100,000 tax-free towards the cost of tuition over the time the children are in college or university.

As described above, the demographics of the women differ from those of the men on the faculty; consequently, the current benefits package doesn't meet their needs as well. A number of companies and institutions have instituted a cafeteria-style benefits programs to rectify inequities in benefits options. A single professor with no children, for example, might choose to use more of her benefits points for her pension plan, improved disability coverage; or reduced health insurance premiums. Other women might use their points for mortgage/rental subsidies or child care—benefits options that don't currently exist at MIT. Faculty members with families could continue to spend their points on family health insurance, tuition assistance, or other benefits that are now part of the Institute's program.

Outside Professional Activities

Salary and benefits provide the bulk of faculty compensation, but in the School of Engineering access to outside consulting work and start-ups can also make a significant difference. The Committee's analysis shows that the compensated outside professional activities of male professors increase steadily with rank, and that at all ranks male professors do more compensated outside professional activities than female professors. At the assistant professor level, there is a factor of 8 difference in the number of days of outside professional activity between men and women while at the full professor level,

there is a factor of over 4.5 difference.

Consider also the disparity between how much time male and female faculty spend on uncompensated outside professional activity (such as professional society committees and panels). In 1999, the number of days of uncompensated outside professional activity that female faculty performed increased steadily with rank. The number of days of uncompensated outside professional activity that male faculty performed remained constant for all ranks. Female faculty did less uncompensated outside professional activity than male faculty at the assistant professor rank, but did more at the full professor rank. In summary, senior male faculty spend more time doing compensated outside professional activity than female faculty while senior female faculty spend more time doing uncompensated outside professional activity than male faculty.

DISCUSSION: HOW AND WHY WOMEN ARE MARGINALIZED

"I was humiliated by my department head at a department meeting. I received the lowest raise in the department in spite of my research going extremely well and receiving a national research award."-- Comment from a senior woman on the faculty.

This woman faculty member is not alone in feeling ill used by her department or simply ignored. Professional marginalization is insidious, because it so often sounds like complaints about an individual's specific situation. Yet the cumulative impact of the Committee's interview data is strongly suggestive, demonstrating a consistent pattern of marginalization for many of the women faculty in the School of Engineering.

Professors naturally want to work with students and colleagues they're comfortable with, and in the traditionally masculine world of engineering, that often means other men with similar backgrounds. Senior male professors tend to take young men under their wings, providing mentorship and access to informal research networks. The result of such natural affinities, however, is that people who seem different - women

and minorities - remain outsiders.

For example, several women professors noted that male faculty who had done their PhDs at MIT got more assistance from their former advisors and PhD committee members. Help from their academic “parents” yielded research contracts and consulting, introductions to influential colleagues, nominations for awards, and protection from unusual teaching and service commitments. Since a far lower percentage of women with MIT PhDs ends up on the faculty in the School of Engineering, fewer women have the same access to academic parents or such informal mentoring networks. It's also striking that four of the six women with MIT PhDs hired from 1986 to 2000 told committee members "I was on my own."

This section discusses the School's academic environment, connecting the Committee's quantitative findings with the individual stories gleaned from interviews. For example, the increasing number of women in academic leadership positions is encouraging, helping to ensure that the concerns of women faculty are considered. Also, once women accept faculty jobs at MIT, they appear to be treated equitably during the formal promotion and tenure process. But the continued low number of women faculty in the School means that female professors often remain isolated; there isn't the critical mass of women in place to change the current work culture, and that culture appears to drive away some promising female candidates. Trouble spots for women faculty include uneven teaching loads and participation in committees; exclusion from participation in research activities with colleagues; lack of mentorship; and work/family issues.

Academic Duties: Research, Teaching Loads, and Committees

Many women faculty interviewed reported problems in setting up and running their research programs, in part because they were not invited to participate in the research activities of male colleagues. Three women full professors said they had not been asked to be on PhD students' doctoral committees in their own research areas within their

departments. This marginalizes women by sending a subtle message of lack of respect to women faculty which also permeates into the graduate student population. Some women commented that they had not been asked to participate in group research grants; exclusion of women from PhD thesis committees means that in some cases, women are not at the table when ideas for new research grants are discussed. Several women have not taught graduate subjects in their own areas, an important step in building a research group. One woman turned down a faculty offer in large part because of her perception that MIT is not conducive to collaboration. People didn't want to work with her here, while they were eager to do so at peer institutions. In contrast, another woman accepted a position at MIT because of the spirit of collaboration that she perceived at MIT.

Some women in the School of Engineering were also concerned about the number of different subjects they were asked to teach; many believed they have taught more undergraduate than graduate subjects compared with their male colleagues. The evidence for such discrepancies is anecdotal but compelling. One woman reported teaching a subject with a hundred students along with her regular teaching load; later, when a male colleague taught the same subject, he was allowed to do so in lieu of his regular load.

In one department, numerous problems in teaching assignments were noted. A junior woman has taught seven different subjects in seven years; when senior men went on sabbatical, she was asked to teach their subjects. A senior woman in the same department taught one of the core undergraduate subjects, as well as three new subjects in three consecutive years when colleagues were on sabbatical or left the department. When she brought this up with her department head, he said he didn't see anything wrong with it. Another woman taught four subjects in a single year while the usual teaching load was two subjects a year.

There was a common feeling among many, but not all, of the senior female faculty that they were not asked to be on influential committees in their department. In one department, presentations at departmental retreats are only given by men, including junior

men who have been in the department less than two years. None of the women, including the senior women, has ever led a discussion at one of these retreats. When one woman suggested inviting a woman to speak at a department-sponsored special symposium with international invited lecturers, the women faculty were told that there were no women anywhere in the world sufficiently qualified to speak at the event. One woman reported that she was included on influential committees in her department, but felt that her contributions to those committees were not valued. In contrast, one woman thought that not being assigned to committees was a positive thing, giving her more time to focus on other activities; she felt that she had input on important departmental decisions by making suggestions to committee members.

Exclusion of female colleagues from collaborative research activities and influential committees, as well as disproportionate teaching assignments, all act to marginalize women. As with compensation, small inequities compound over time. For instance, while not being asked to be a member of a single thesis committee probably has little impact by itself, continued exclusion from thesis committees over a period of years can lead to further exclusion from group research grants and other important professional opportunities.

Mentorship and Department Heads

Mentorship can make all the difference in a work environment, especially for junior faculty grappling with the many demands of being a professor. Yet both the junior and senior faculty women interviewed by committee member expressed concern about the lack mentoring in the School of Engineering. Several of the junior women didn't seem to understand what was required for promotion and tenure. About half of the junior women spoke of problems such as lack of advice and feedback, conflicting advice from different senior faculty, and the refusal of one senior faculty member to act as a mentor. One mentor told a junior woman that she shouldn't ask for her case to be put up that year

because another woman in the department was already being considered for promotion. The Committee did not determine whether male faculty also suffer from a lack of adequate mentoring, but this important issue should be pursued in the future.

The tendency of quite a few women faculty to work in interdisciplinary or nontraditional areas presents an additional hurdle to effective mentoring. In these cases, it's easy for the female faculty member to become isolated because there is no existing group of faculty to interact with. That means she is solely responsible for selling the work to graduate students and her colleagues, for starting and teaching relevant subjects, and for building research funding. Those in charge may not value her work precisely because it is different and doesn't fit the standard disciplinary molds, and this in turn can lead to problems obtaining departmental resources; it can also affect compensation. On the other hand, one woman reported that she felt that her interdisciplinary work allowed her to interact with a number of different communities to find one that fit well; she reported feeling highly valued precisely because of the interdisciplinary work she did.

Formal mechanisms instituted by the School or larger MIT administration will shift some imbalances in the academic environment. But how an individual faculty member interacts with her department head or lab director still has the most impact on her daily professional life. Department heads who include women in decision-making, provide concrete assistance in fund raising, and have constructive conversations about professional development can be a tremendously positive influence. However, interviews with women faculty indicate there is still much room for improvement on this front.

Work/Family Issues

Virtually all the female engineering faculty who have children, and many who do not, told the Committee how hard it was to balance family obligations with an MIT faculty career. This problem is especially acute before tenure, causing stress and exhaustion. The following quotes are typical: *" I couldn't see a way to have kids as an*

untenured faculty member but I did notice that most of the junior male faculty in the department do have kids…. MIT was not the only reason I didn't have children but it is a big reason", "Although I knew that having children in graduate school wasn't strictly forbidden, I received very strong messages that having children while in graduate school would be severely frowned upon. I believed that if I did have children in graduate school, it would severely compromise my future career opportunities." and "I thought for years that working the way I did precluded having children".

This situation hurts not only the women on the MIT faculty but also affects the pipeline and hiring. MIT women PhD students, prime candidates for faculty positions here and elsewhere, observe the time stresses of a faculty career first-hand and some opt out of academic careers entirely. MIT's existing family leave policy only provides a short time off (one semester), yet ongoing child-care obligations take the greatest toll. The current policy is gender blind; some women expressed the concern that some men who take the leave use it to further their careers (by traveling the world to give seminars promoting their research or to start companies) rather than to care for the new child. This further tilts the playing field, rather than leveling it. Incremental changes to the existing policy are not enough, which is why the Committee advocates a half-time position for faculty caring for children.

Or consider MIT's current benefits package. The demographics make clear that far fewer female MIT professors have children than the national average for women. It is ironic that the women on the faculty, who find it more difficult to have children than men partly because of the pressures of their MIT positions, are, in effect, subsidizing the families of their male colleagues. This committee therefore supports a cafeteria-style benefits package as an alternative. The basic idea is that employees all receive the same number of benefits points; they can then choose how to spend those points from a broad menu of benefits options. For instance, many of the women faculty who do not use the medical insurance benefit have children; being able to put more of their points towards a

child-care subsidy, rather than medical insurance, would be more appropriate for them.

RECOMMENDATIONS

Opening the pipeline is easier said than done. It is not just a matter of seeking out more women for faculty slots; women need to have good reasons for coming to MIT's School of Engineering. The administration clearly takes this issue seriously. However, in order to attract a higher percentage of women faculty, past gender inequities in pay and benefits still need to be adjusted; unequal teaching loads, committee participation, and research-project access must be addressed; and the strain on women when they're building a career and raising children should be acknowledged. The Committee's recommendations for addressing the issues arising from this study are detailed below.

Hiring Women Faculty

- We recommend a target of 20% women on the faculty in the School of Engineering over the next 10 years. The small number of women faculty increases the problems of marginalization.

- Create a new program for junior as well as senior female hires.

- Provide departments with the best practice search methods. For example, hire a professional at the SoE level to assist search committees in identifying potential female candidates. The SoE hires from a relatively small number of institutions. The pipeline data for those institutions should be obtained.

- The affirmative action policy should be reviewed and enforced more strictly. The Dean's office should track the progress of credible women candidates through the search.

- Programs to attract women to doctoral programs need to be implemented.

- There should be an effort to discover the reasons men and women reject faculty offers, where they go and why.

- Ameliorate work/family conflicts.

Women in Academic Leadership Positions

- Increase the number of women in powerful academic leadership positions in the SoE. Offer such opportunities to senior women who are already here. Include women in positions that prepare people for major leadership positions, such as associate department heads or associate lab directors. Increasing the number of women on the faculty should increase the pool of women with the right skills and the inclination to accept such positions. The SoE should also consider hiring women from outside for leadership positions. Women should be represented on Engineering Council, preferably in two or more positions.

Compensation

- The process and criteria for determining salary increases should be made clear to the faculty. The end-of-year interviews that department heads hold with their faculty to discuss performance and salary raises are ineffective. Current reviews of salary at the level of Dean and Academic Council do not appear to be adequate to identify salary discrepancies among women faculty. There should be an improved review process for salaries.

- The benefits package should be modified so that the women on the faculty receive the same subsidy as the men. Further information on what benefits the women faculty would use is needed. A cafeteria style benefits plan could address this issue.

Academic Duties

- Women should be included in group grants and other broad funding opportunities where they have appropriate expertise to the same extent as men.

- We recommend that department heads review teaching assignments to ensure that male and female faculty have similar teaching loads.

- Women should be appointed to more influential departmental and School committees. One possibility is to ask the women which committees they want to serve on and, unless there is some reason not to, offer them that post.

Mentoring

- There should be more School-wide mentoring. One part of this should be a tenure workshop for junior faculty, in which the faculty personnel records (rendered anonymous) of a successful case and of an unsuccessful case are reviewed by senior faculty. There should be some program in place for the professional development of faculty who are interested in administrative positions.

Department Heads/Lab Directors

- Department heads have a significant influence over the hiring of faculty. They must be responsible for creating and maintaining a good working environment within their departments for all faculty members. Commitment to doing this should be an important criterion for selecting new department heads and lab directors. Department heads should be held accountable for how well they carry out this responsibility and this should be reflected in their salary raises.

- Education of Department Heads in the way gender schema operate could improve the environment for women on the faculty.

Work/Family Issues: Faculty with Children

- The SoE should institute a new release policy for faculty with children, allowing them to work half time at half time salary. There are several issues that need to be resolved in implementing the proposed policy; a committee should be formed for this purpose. The Committee recognizes that a major policy change of this order would be challenging. But it would undoubtedly attract more women faculty to the School of Engineering. This, in turn, would encourage more female graduate students to pursue academic careers, opening the pipeline of women into faculty positions.

- The current child care system is insufficient for the needs and demands of women on the faculty. The number of slots available needs to be expanded. A revision of the benefits to make them more equitable for women faculty might include partial subsidization of child care.

- Until a new family leave policy is in place, there is a need to oversee the current policy to ensure that it is not abused.

PROGRESS: WHAT MIT IS DOING TO ACHIEVE GENDER EQUITY

MIT has already made substantial progress in implementing the recommendations of the committee. The actions of the Dean of Engineering, as well as the formation of the Council on Faculty Diversity last year, have been particularly helpful.

Hiring women faculty

The number of women faculty in the School of Engineering has increased from 31 in 1999 to 34 as of September 2001. Three additional women have already accepted faculty positions to begin during the 2002 calendar year; one of these is tenured. In particular, the Department of Electrical Engineering and Computer Science has hired three women since 1999, two with tenure.

The Dean has agreed to a target of 20% women faculty in 10 years.

The Council on Faculty Diversity is preparing a search committee handbook outlining appropriate search practices. This handbook will have data on the pool of women completing PhD degrees at the top 5 schools in each department in Engineering.

Dean Magnanti has hired an outside consultant to assist with the search for a new DH in CEE.

The affirmative action policy is being enforced more strictly, with Dean Magnanti reviewing applications from women.

Dean Magnanti has agreed to hire a consultant to discover the reasons men and women reject faculty offers, by performing a retrospective study of previous candidates who rejected our offers.

The Institute has recently implemented new policies for faculty with children, including extension of the tenure clock for childbearing and part time appointments for tenured faculty.

Women in Academic Leadership Positions

The number of women in line academic administration positions has increased from one in 1999 to three this year (2002). One of the new line academic administration appointments is on Engineering Council, the other is on Academic Council. In addition, three women were appointed to other administrative roles since September 1999.

Compensation

The salaries of several women faculty have been adjusted to address inequities. The Subcommittee on Faculty Quality of Life of the Council on Faculty Diversity will be considering possible changes to the benefits policies.

Mentoring

The Committee on Women Faculty plans to hold mentoring workshops for junior faculty this year.

Department Heads/Lab Directors

The Dean is arranging a workshop on gender schema for this academic year for Engineering Council.

Work/Family Issues: Faculty with Children

The Institute has recently implemented several new policies for faculty with children, including extension of the tenure clock for childbearing and part time appointments for tenured faculty.

Rectifying gender imbalances is important to the future excellence of MIT, because it opens up a new pool of talent. More important, establishing an atmosphere of fairness will make the School of Engineering a better place for all. Both male and female junior faculty will benefit from improved mentoring and knowledge of the tenure process. Increasing support for interdisciplinary research and professional collaboration makes sense for an engineering school of MIT's caliber, especially during a time of rapid technological innovation.

The findings of this study indicate a cumulative pattern of gender discrimination over many years, one that cannot be accounted for by lesser qualifications or personal

choices. But the fact that change has occurred at MIT is encouraging. It speaks to what good leadership can achieve and how academic institutions can lead the way in establishing parity, acceptance of differences, and a more open work culture.

REFERENCES

Committee on Women Faculty in the School of Science (1999) A study on the status of women faculty in Science at MIT. MIT Faculty Newsletter, March 1999.

Steinpreis, RE, Anders, KA, and Ritzke, D. (1999) The impact of gender on the review of the curricula vitae of job applicants and tenure candidates: A national empirical study. Sex Roles. 41, 509-528.

Valian, V. (1998) Why So Slow? MIT Press, Cambridge MA.

Fig. 1: Percentage of degrees awarded to women and percentage of faculty who are women in School of Engineering.

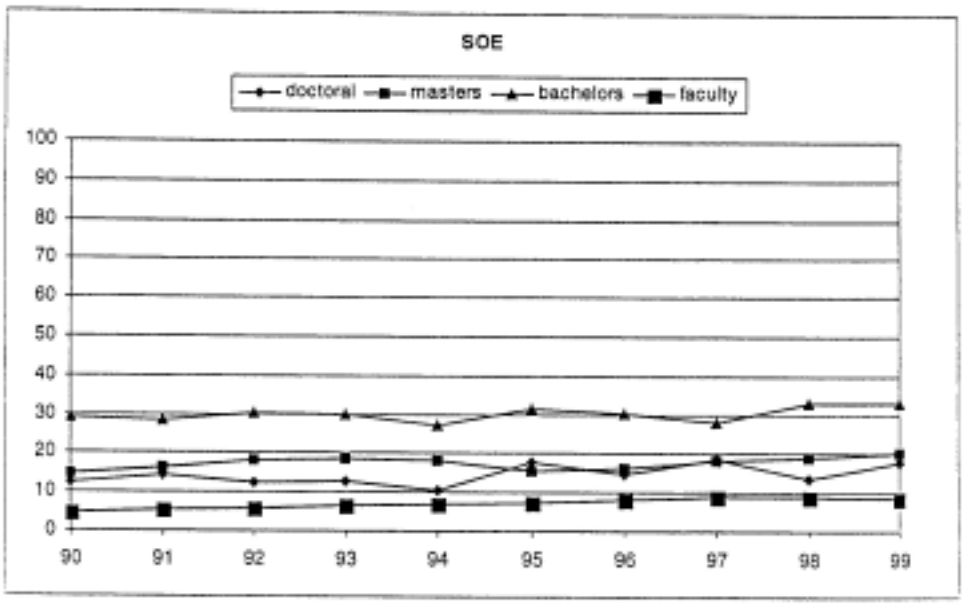
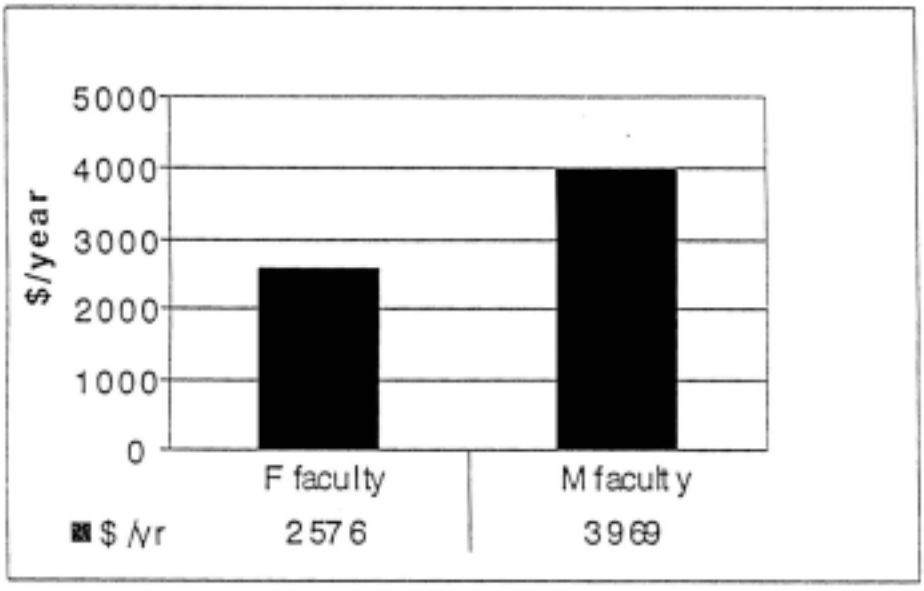


Fig. 2 Health care benefit subsidy to female and male faculty.



Report of the School of Humanities, Arts, and Social Sciences

Reports of the Committees on the Status of Women Faculty

March 2002
Massachusetts Institute of Technology

Statement from the Dean of the School of Humanities, Arts and Social Sciences

The Report of the Gender Equity Committee in the School of Humanities, Arts, and Social Sciences has provided an important service to the School and to the Institute as a whole. It has identified causes for optimism and causes for concern, and has put forth recommendations that will make this university a better place for all.

It should not be surprising that there are more women on the faculty of our School than in others at MIT, given the higher representation of women in the humanities, arts, and social sciences. This is not cause for complacency, however. Rather, it gives us a strong foundation for progress. And we have made significant progress in the past decade in the recruitment and retention of women faculty. In addition, the report indicates that in individual academic units there may be no significant difference in salaries for senior women and men. However, comparative salary data hardly tell the full story of the lives of senior women faculty in SHASS. In particular, a significant number of senior women have been made to feel marginalized in their academic units and in the wider school and Institute. This finding is consistent with the findings in other MIT schools, and it is deeply troubling.

To address the problem of marginalization and other concerns, the authors of this Report have produced some important recommendations that focus on increasing the number of women faculty at all ranks, improving the mentoring of all incoming faculty, monitoring faculty salaries at all levels, providing comprehensive information to all faculty about research funding and related opportunities within SHASS and the Institute, and creating the conditions by which more women faculty can achieve positions of leadership. The next step for SHASS is to begin to implement these recommendations and others.

An enormous effort went into the design, research and writing of the Report. Its findings and recommendations will certainly help to advance the quality of life for all SHASS faculty in the years ahead. I want to express my deep gratitude to all members of the SHASS Gender Equity Committee, and especially to its co-chairs, Professor Deborah Fitzgerald and Professor Jean Jackson, for their tremendous leadership. The committee has demonstrated its commitment to excellence in the widest definition of that term. The beneficiaries will be the entire faculty in the School of Humanities, Arts, and Social Sciences at MIT.

Philip S. Khoury
Dean
MIT School of Humanities, Arts and Social Sciences
7 March 2002

REPORT OF THE GENDER EQUITY COMMITTEE
SCHOOL OF HUMANITIES, ARTS, AND SOCIAL SCIENCES
MIT

March 2002

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SCHOOL OF HUMANITIES, ARTS AND SOCIAL SCIENCES
GENDER EQUITY COMMITTEE REPORT
EXECUTIVE SUMMARY

MIT's School of Humanities, Arts, and Social Sciences (SHASS) has the largest number of women faculty at the Institute: in 2000, 31% of all faculty in SHASS were women, 20% of them tenured. Unlike the other four schools at MIT, SHASS's major gender problems are not the number of women faculty (although the number of senior women is disappointingly low in Economics, Political Science, and the Music side of Music and Theater Arts); rather, they concern issues regarding salary, committee work, a weak communication and mentoring system, and a "male" atmosphere at times uncomfortable and difficult to work in. Due to MIT's dominant focus in science and engineering, most SHASS interviewees also report feeling marginalized and alienated, "second-class citizens" in the Institute's academic hierarchy.

The SHASS Committee on Gender Equity conducted lengthy interviews with all tenured women (30), as well as 15 tenured men who were named by the women as comparable in terms of career path. The Committee collected information on gender differences in salary, rates of promotion and tenure, access to research funds within the School and the Institute, rates of appointment to School and Institute chairs, degree of recognition by the School and Institute for exemplary scholarship and teaching, and service on Institute committees.

With respect to salary, the Committee found that although a wide variation in salaries by department characterizes the School, gender discrimination does not occur at present within any department. That is, the highest salaries in each department are as likely to belong to women faculty as to men. Looking at the School overall, however, the highest salaries by far go to male faculty, mainly due to their location in the more male-heavy social science departments—in particular Economics, which in 2000 had one tenured woman and nineteen tenured men. These findings support observations by others regarding a "feminization" process which operates in many areas of paid work, including academe: those disciplines with larger proportions of women, which tend to be humanistic in nature, command lower salaries and receive less prestige than male-heavy areas of scholarship. The Committee also found that in four humanities departments, salaries for both men and women are lower than that at peer institutions, a finding that cannot be explained by the feminization thesis.

With regard to rates of promotion and tenure, the Committee found that men and women are promoted and tenured at the same rate, and within a given department women are no more likely than men to be held back or denied tenure. However, we did notice that the only two senior women in Political Science were tenured in the 1980s. And promotion to full professor occurs more rapidly in Economics, where the faculty is nearly all male, than elsewhere in the school.

With respect to access to internal research funds, the Committee found a small gender difference in amount requested compared to amount granted.

The Committee found that women faculty in SHASS are disproportionately represented on Institute committees. First, women on Institute committees are far more likely to be from SHASS than from the other four schools (SHASS women constitute 25-60% of women serving on all committees but one). Second, SHASS representatives on

these committees are far more likely to be women than men (43% of Institute committee members from SHASS are women, and in AY2000 senior women made up 45-86% of the SHASS representation on six committees). Clearly, SHASS women have been doing considerably more than their share of Institute committee work.

Turning to endowed chairs held by SHASS women, the Committee found that the number of untenured women receiving chairs increased significantly in 1997, but declined to former levels by 2000. Between 1995-2000 the number of endowed chairs going to senior SHASS faculty increased, and the proportion awarded to women remained constant, roughly one in three.

The highest Institute award, the Institute Professorship, has never been given to a SHASS woman, and another highly prized award, the Killian Faculty Achievement Award, has gone to a SHASS woman only once. SHASS women have received other Institute awards with more frequency, but not in proportion to their numbers.

The most powerful findings on the status of SHASS women are contained in the interview transcripts. A substantial majority of women faculty feel that they have not been comprehensively mentored and advised by those senior colleagues in a position to help them understand what is required to succeed at MIT. They report receiving inadequate information on achieving promotion and tenure, obtaining salary increases, competing for external research funding, and applying for course releases or assistance with housing and the like. Many feel that decision-making in the departments is far from transparent, and they report feeling ignored and dismissed by colleagues and administrators alike. SHASS women report being reluctant to try to improve their situation at MIT by cultivating outside offers, to which the School and the Institute respond with increases in salary and other inducements to stay. Interviewees say that such deceptive "game-playing" would make them uncomfortable.

The Committee has compiled a substantial list of specific recommendations for improving the status of SHASS women, which can be summarized as follows:

- Adjust salaries for women and men to recognize, in addition to scholarship, pedagogical excellence, outstanding leadership, and exceptional Institute service
- Establish clear mentoring guidelines for department heads and senior faculty, and ensure that they advise junior and new faculty comprehensively and frequently about department, School, and Institute expectations
- Create mechanisms for informing all faculty about available opportunities, "rules of the game," availability of special assistance, and general departmental and School operating procedures; overly hierarchical departments should democratize decision-making
- Create a permanent gender equity committee to monitor searches for new faculty, salaries, teaching loads, committee work, research assistance, and awards

Introduction and Background

In the wake of the highly visible and galvanizing Report on the Women Faculty in Science, in the summer of 1999 MIT Provost Robert Brown asked each of the Deans of the other four Schools to appoint committees to look into the status of their senior women faculty. Dean Philip Khoury appointed the Gender Equity Committee for the School of Humanities, Arts, and Social Sciences (SHASS) in October.

SHASS has the largest concentration of tenured women at MIT (*senior* and *tenured* are interchangeable). In AY00 there were 28 tenured women (20% of SHASS faculty), and in AY02 there are 31 tenured women (21%). (See Table l: Number and Percentage of SHASS Women and Men Faculty 1996-2000, which indicates the total number of faculty in the School). Despite the comparatively greater numbers of tenured women in this School, however, its tenured women felt that other issues related to gender inequity existed and should be investigated by the Committee.

TABLE 1: Number and Percentage of ALL SHASS Women and Men Faculty 1996-2000

	1996	1997	1998	1999	2000
Women	39 (28%)	41 (29%)	44 (31%)	49 (33%)	47 (31%)
Men	101 (72%)	98 (71%)	98 (69%)	100 (67%)	104 (69%)
TOTAL	140	139	142	149	151

The disciplines represented by SHASS faculty are remarkably heterogeneous, and only four out of a total of ten SHASS units have PhD programs (Economics, Political Science, Linguistics and Philosophy, and the Program in Science, Technology and Society). The majority of SHASS women faculty are in humanities units without PhD programs. These two factors make comparisons across units difficult.

Once constituted, the Committee consulted with all the tenured women faculty in SHASS to develop a list of issues that needed further study, some of which were not within the Committee's mandate. All members agreed that several of these issues were related to the ones under investigation, and are briefly discussed at the end of the report:

- Status of lecturers
- Experience of the junior faculty
- Women graduate students and the "pipeline" issue
- Race and sexual orientation
- Recruitment policies

Methodology

The Committee conducted interviews with tenured women faculty and tenured male faculty who were named by some of the women interviewees as approximately "comparable" to them with respect to stage of career. The Committee also collected quantitative data on salaries, rates of promotion and tenure, access to School funds for research and travel, representation on School and Institute committees, and the frequency and type of recognition received by SHASS senior women faculty within the School and at the Institute as a whole.[1]

The Committee drew up a list of questions (see Appendix I: Interview Questions) and ended up interviewing 30 women and 15 male "comparables." Each faculty member was interviewed by a team of two Committee members, and team membership rotated among all members.

The substantive part of this report is divided into 5 sections, followed by Discussion and Recommendations. The sections are:

- Salaries and research funds
- Promotion and tenure
- Service on committees
- Institute awards
- Gender-related qualitative themes emerging from interviews

Findings

Salaries and Research Funds

A. Salaries

The salary subcommittee was permitted to examine salary data for one year only, AY01, which precluded any observations of comparable rates of salary increase over time. We inspected the range of salaries in each unit, broken down by rank, gender, and age.[2] Discovering whether salaries systematically vary due to gender proved difficult, first, because of the small amount of available data, second, because of the large differences in average salaries between units, third, the number of faculty per unit (department or

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[1] The Committee would like to express its deep appreciation for all of the help provided by Marsha Orent, who also provided support to two subcommittees investigating salary and promotion, and Institute service. We would also like to thank Philip Khoury, Sue Mannett, Doug Pfeiffer, Marie DiMauro, and Gabriella Browne in the Dean's Office, and Cherie Potts, the transcriber.

[2] At MIT, 6 of the departments in SHASS are referred to as "units," because, in MIT parlance, they fall under Course 21, the Humanities Department. Thus History is called 21H, Anthropology is called 21A, and so forth. The 4 Ph.D-granting departments are known by a different number, except the Program in Science, Technology and Society, which is called STS.

section) involved is small, and fourth, the proportion of male to female varies widely among the units: some are 50-50, but others are extremely unbalanced.

We found no difference in salaries between men and women at the Assistant Professor rank after controlling for the unit making the appointment. Within a given unit men and women appear to start at the same base salary. Nor did we find systematic difference in salaries between senior men and senior women within a given unit. In some units men make the highest salary, in some the salary amount is equal or nearly so, and in some women earn the highest amounts.

Major salary differences occur between units, and so insofar as proportions of women to men vary from unit to unit, and insofar as those units with the smallest percentage of women are those units that pay the higher salaries, gender-correlated discrepancies do exist within SHASS. We feel that the pronounced differences between disciplines with respect to proportion of men and women and the salary differentials reflect a nation-wide gender bias in higher education, but does not reflect a systemic gender discrimination in salary peculiar to MIT. Researchers in higher education have long noticed that those fields characterized by a higher proportion of women in them reveal a decrease in prestige and in material benefits as the numbers of women increased over time. Scholars have termed this process of devaluation linked to increased numbers of women in certain disciplines "feminization."

An additional factor producing the disparities in salaries between units is the pace of tenure and promotion. If we ignore field differences, men are clearly on average promoted more rapidly than women in SHASS. However, essentially all of this gender difference is due to inter-, rather than intra-unit variations in promotion trajectories because of the different proportions of men and women in the PhD granting units and the humanities and arts units and the difference in promotion and tenure scheduling.

In light of the difficulties of making inter-unit comparisons in SHASS, we consulted the National Faculty Salary Survey to compare salary levels in the humanities units of SHASS with salary levels at other peer institutions nationwide. We found that in four units of the School the mean faculty salary is significantly lower than the mean salary at these peer institutions. Accounting for this difference is not easy; it clearly does not result from gender bias, given the fact that these fields are feminized nationally (making for lower salaries). Despite the numerous publications, prestigious fellowships, recognition in national and international professional associations, prizes and other marks of distinction of the MIT faculty in these fields, they are still paid less than their colleagues at competing institutions.

B. Internal research funds

Several times a year, SHASS faculty are invited to apply for special funds to help defray costs of research and professional travel. Dean's Fund awards, available to SHASS faculty, lecturers (with a 3-year contract or more), and senior lecturers, are limited to under $2000 and are used typically to help defray conference expenses and travel related

to research projects.. Examining data from FY 1993 to FY2000, we did not distinguish any pronounced differences between men and women applicants to the Dean's Fund, in number of requests within the individual administrative units, or the number of awards granted. However, we did find that in 7 out of 10 years female faculty in all units received between 11%-36% less of the money requested than did men. And although we did find a difference between women and men in the amount of money requested, this second difference may be due to the fact that Economics puts in more requests, is the largest unit, is heavily male, and on average requests higher amounts (see Table 2: Dean's Fund Summary Statistics 1991-2000).

Nor did we discern any meaningful gender disparities in the biannual Provost Fund awards, ranging from $3,000-$20,000, and available to SHASS faculty, lecturers (with a 3-year contract or more), and senior lecturers (see Table 3: Provost's Fund Summary Statistics 1994-2000).

Promotion and Tenure

We examined promotion and tenure rates, and time of promotion to full professor, defined as number of years since receiving the PhD. The pace at which faculty are reviewed for promotion and tenure follows AAUP rules and is fairly consistent across the School, particularly with respect to younger faculty (see Table 4: Assistant or Associate Without Tenure Hired Between 1985-1994).

Table 2
SCHOOL OF HUMANITIES, ARTS, AND SOCIAL SCIENCES
Dean's Fund Summary Statistics 1991 - 2000

Award Chart 1

	FY 91		FY 92		FY 93		FY 94		FY 95		FY 96		FY 97		FY 98		FY 99		FY 00	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Number of awards requested	29	8	44	16	25	14	27	13	31	14	28	14	33	15	20	11	17	9	24	10
Number of awards received	29	8	38	12	23	13	24	10	29	9	27	13	29	13	18	10	17	9	21	8
Percentage of Total Awards Received	100%	100%	86%	75%	92%	93%	89%	77%	94%	64%	96%	93%	88%	87%	90%	91%	100%	100%	88%	80%

Award Chart 2

	FY 91		FY 92		FY 93		FY 94		FY 95		FY 96		FY 97		FY 98		FY 99		FY 00	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Average Amount Requested	1,526	1,273	1,442	1,884	1,510	1,518	1,590	1,338	1,498	1,445	2,907	1,500	1,970	1,509	2,071	2,095	1,819	1622	1,903	1619
Average dollar award received	1,319	1,108	851	845	1,011	840	1,174	849	1,235	667	2,079	1,174	1,336	1,067	1,456	1,217	1,691	1322	1,476	968
Percentage yield	86%	87%	59%	45%	67%	55%	74%	63%	82%	46%	72%	78%	68%	71%	70%	58%	93%	82%	78%	60%

Award Chart 3

	FY 91		FY 92		FY 93		FY 94		FY 95		FY 96		FY 97		FY 98		FY 99		FY 00	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Percentage of Total Awards Requested	78% (N=29)	22% (N=8)	73% (N=44)	27% (N=16)	64% (N=25)	36% (N=14)	67% (N=27)	33% (N=13)	69% (N=31)	31% (N=14)	67% (N=28)	33% (N=14)	69% (N=33)	31% (N=15)	65% (N=20)	35% (N=11)	65% (N=17)	35% (N=9)	71% (N=24)	29% (N=10)
Percentage of M/F in total SHASS Faculty (all ranks)	79%(N=101)	21% (N=27)	78% (N=101	22% (N=28)	77% (N=101)	23% (N=31)	76% (N=97)	24% (N=30)	75% (N=105)	25% (N=35)	72% (N=101)	28% (N=39)	71% (N=98)	29% (N=41)	69% (N=98)	31% (N=44)	67% (N=100)	33% (N=49)	69% (N=104)	31% (N=47)

Table 3
SCHOOL OF HUMANITIES, ARTS, AND SOCIAL SCIENCES
Provost's Fund Summary Statistics 1994 - 2000

Award Chart 1

	FY 94		FY 95		FY 96		FY 97		FY 98		FY 99		FY 00	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Number of awards requested	8	3	7	0	7	2	6	2	9	2	5	3	7	6
Number of awards received	6	3	6	0	3	2	4	2	9	2	4	0	5	5
Percentage of Total Awards Received	75%	100%	86%	0%	43%	100%	67%	100%	100%	100%	80%	0%	71%	83%

Award Chart 2

	FY 94		FY 95		FY 96		FY 97		FY 98		FY 99		FY 00	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Average Amount Requested	18,689	16,227	18,259	0	18,004	9,524	13,633	15,436	13,727	19,168	14,740	17,881	17,275	15,549
Average dollar award received	11,775	10,567	11,472	0	5,671	10,800	7,850	12,950	10,550	7,500	14,633	0	7,857	10,000
Percentage yield	63%	65%	63%	0%	31%	113%	58%	84%	77%	39%	99%	0%	45%	64%

Award Chart 3

	FY 94		FY 95		FY 96		FY 97		FY 98		FY 99		FY 00	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Percentage of Total Awards Requested	72% (N=8)	27% (N=3)	100% (N=7)	0% (N=0)	78% (N=7)	22% (N=2)	75% (N=6)	25% (N=2)	82% (N=9)	18% (N=2)	63% (N=5)	37% (N=3)	54% (N=7)	46% (N=6)
Percentage of M/F in total SHASS Faculty (all ranks)	76%(N=97)	24% (N=30)	75% (N=105)	25% (N=35)	72% (N=101)	28% (N=39)	71% (N=98)	29% (N=41)	69% (N=98)	31% (N=44)	67% (N=100)	33% (N=49)	69% (N=104)	31% (N=47)

Table 4: Assistant or Associate Without Tenure Hired Between 1985-1994

Department	No. of Hires (M/F)	No. Tenured (M/F)	Tenure Rate
History	7 (3,4)	2 (0,2)	28.60%
Anthropology	3 (1,2)	2 (1,1)	66.70%
FL & L	2 (2,0)	0	0%
Pol. Sci.	12 (11,1)	4 (4,0)	33.30%
Writing	1 (0,1)	0	0%
Literature	9 (6,3)	5 (3,2)	55.50%
STS	3 (0,3)	2 (0,2)	66.60%
Music & TA	4 (3,1)	3 (2,1)	75%
Ling/Phil	5 (4, 1)	2 (1,1)	40%
Economics	15 (12,3)	7 (5,2)	47%

When we looked at the distribution of tenured women in the units, we found that two units had hired and tenured women and men in equal numbers. In certain other units the one or two senior women who had been awarded tenure in the1980s or earlier continued to have only senior male colleagues.

We did find that relatively more men were promoted to full professor earlier in their careers than women, but concluded that most of this discrepancy is due to differences between fields with respect to mean year of promotion as measured from year PhD was received. Specifically, Economics promotes to full after fewer than ten years far more frequently than other disciplines represented in the School, which skews gender figures because Economics has such a low proportion of tenured women (see Table 5: Promotion Rates including Economics and Table 6: Promotion Rates excluding Economics).

Table 5: Promotion Rates including Economics[3]

	No. w/tenure	No. full	No. hired full	10 yrs. or less	11—15 yrs.	More than 15 yrs.
M	**72**	**65**	**14**	**23**	**19**	**9**
F	**30**	**20**	**6**	**4**	**5**	**5**

Table 6: Promotion Rates excluding Economics[4]

	No. w/tenure	No. full	No. hired full	10 yrs. or less	11—15 yrs.	More than 15 yrs.
M	**53**	**46**	**12**	**9**	**17**	**8**
F	**28**	**19**	**6**	**4**	**5**	**5**

Table 6A presents the number of SHASS women and men faculty by rank and department for FY 2000.

[3] The abbreviations refer to the following:
"# w/ten" = number of faculty in the School with tenure as of July 2001
"# full" = number of current tenured faculty who are at the Full Professor rank
"# hired full" = number of current Full Professors who were hired at that level from another institution
"10 yrs or <" = number of current Full Professors, excluding those hired at that level, who were promoted to the rank of Full Professor within ten years or less of receiving their Ph.D
"11-15 yrs" = number of current Full Professors, excluding those hired at that level, who were promoted to the rank of Full Professor 11 to 15 years (inclusive) of receiving their Ph.D
"> 15 yrs" = number of current Full Professors, excluding those hired at that level, who were promoted to the rank of Full Professor more than 15 years after receiving their Ph.D

[4] These numbers exclude faculty in the Department of Economics.

TABLE 6A: Number of Women and Men Faculty in SHASS by Department and Rank
FY2000

Department/ Program	Graduate Program	Gender	Assistant	Associate w/oTenure	Associate w/Tenure	Full	Total
Economics	M.A.1937	Men	4	2	1	19	26
	Ph.D.1941	Women	2	2	0	1	5
Total Econ.			6	4	1	20	31
Anthropology	No	Men	0	1	0	2	3
		Women	1	0	0	2	3
Total Anthro.			1	1	0	4	6
Foreign Lang. and Literataure	No	Men	0	2	0	2	4
		Women	1	0	1	3	5
Total FL&L			1	2	1	5	9
History	No	Men	0	1	1	4	6
		Women	2	1	2	2	7
Total History			2	2	3	6	13
Literature	(CMS) M.A.	Men	1	1	1	6	9
	1998	Women	1	0	2	1	4
Total Literature			2	1	3	7	13
Music and Theatre Arts	No	Men	3	0	0	6	9
		Women	0	1	1	2	4
Total Music & TA			3	1	1	8	13
Writing & Humanistic St.	No	Men	0	0	0	4	4
		Women	2	1	0	3	6
Total W&HS			2	1	0	7	10
Linguistics	Ph.D. 1961	Men	1	2	0	5	8
		Women	1	0	1	1	3
Total Ling.			2	2	1	6	11
Philosophy	Ph.D. 1963	Men	2	2	1	4	9
		Women	0	0	1	1	2
Total Phil.			2	2	2	5	11
Political Sci.	Ph.D. 1958	Men	4	2	3	7	16
		Women	2	1	0	2	5
Total Pol. Sci.			6	3	3	9	21
STS	(HSSST) Ph.D	Men	2	0	0	5	7
	1988	Women	1	0	2	2	5
Total STS			3	0	2	7	12
TOTAL			30	19	17	84	150

Service on Committees

In the interviews conducted with senior women faculty, again and again women commented on the fact that they felt they were doing more Institute work, or what some call "water carrying," than their male colleagues. The Committee reviewed the membership of the largest and/or most important Institute committees from 1990-2000, and found that this perception is correct. We examined the number of individual women and the number of individual men who have served on these committees, and found that SHASS women are disproportionately represented on all but one Institute committee in two different ways. First, SHASS women faculty represent between 25% and 60% of all women on every committee except the Committee on Discipline. Second, although in 1999-2000 senior women constituted 20% of SHASS faculty, from 1990-2000, they represented a mean of 43% of Institute committee membership from SHASS, and on six out of fifteen committees, SHASS women constituted 45% to 86% of the members from SHASS. Clearly, women in SHASS are doing a lot more committee work than some of their male counterparts (see Appendix II: SHASS Representation on Institute Committees).

In addition to confirming the perception that SHASS women carry an extra burden by serving on committees in disproportionate numbers, these data suggest several other conclusions. On the one hand, because so few women from Science, Engineering, Sloan, and Architecture serve on these committees, they are in some ways invisible at the Institute as a whole, and they have relatively less experience in how the Institute works. This encourages the perception, not only among male faculty members but also among the administrators and students who serve on these committees, that those fields are male pursuits. Concomitantly, the high number of women from SHASS who appear on these committees encourages a perception that the fields they represent are unusually "feminine," despite the fact that male faculty outnumber female faculty in these fields, both at MIT and at the most prestigious universities.

One possible contributing factor to this overrepresentation of women on committees is a "kill 2 birds with one stone" attitude at play during the nomination process. Striving to constitute representative committees, perhaps a disproportionate number of SHASS women are nominated because in this way both a SHASS faculty member and a woman are serving on a given committee.

Institute Awards

A. Chairs held by SHASS faculty

Faculty chairs, designated for junior or senior faculty, come from a variety of sources. Some chairs are quite constrained as to criteria, and others are awarded more or less at the discretion of the department, School, or Institute.

When funds for a chair are given to MIT, one of the following occurs 1) the funds are given to a particular department; 2) the funds are given to the Institute, which assigns the

chair to a particular department; 3) the funds are given to a School and the dean designates a recipient. All chair awards must be approved by the provost (see Appendix III: SHASS Chair Statistical Breakdown by Unit and Year).

Junior faculty chairs: All junior faculty chairs, usually controlled by the Provost's Office, are designated Career Development chairs and are occupied for a period of 3 years. Overall, the number of CD chairs awarded to junior faculty in SHASS has increased (see Appendix III).

Examining faculty chair awards for AY96-AY00, we found that the percentage of chairs held by women increased significantly in the Assistant Professor rank, producing a statistical hump which began in 1997. This hump moved through the junior faculty ranks (from assistant to associate) in 1998 and 1999, and disappeared in 2000, illustrating that, despite such welcome increases in the percentage of chairs, they do not carry over into the senior ranks.

Senior faculty chairs: Chairs going to senior faculty are renewable at 5-year intervals, and are usually renewed. Institute professorships are held until retirement. In AY00 23% of SHASS senior women held chairs, as compared to 32% men (see Table 7: Tabular Representation of Chair Holder by Chair and Unit).

B. Other Awards

Several important MIT awards recognize faculty scholarship and teaching. Within the School, the largest award is the Levitan Prize, an annual competition for a $20,000 prize awarded to the faculty member with the best proposal for an important and innovative research project. The Committee found no gender bias in Levitan Prize awards (see Appendix IV: Levitan Award).

Six major Institute-wide awards are given out: Institute Professorships, the MacVicar Prize in Recognition of Teaching Excellence, the Wade Award (for research), the Class of 1960 Endowment for Innovation in Education Fund, the Killian Faculty Achievement Award, and the Edgerton Award (for both research and teaching). The most dismal showing is Institute Professorships; of the 52 awarded so far, none has gone to a women in SHASS, and only two have gone to women in other Schools. Similarly, only one Killian Award has gone to a woman in SHASS, and only one to a woman outside SHASS. The Wade, Class of 1960, Edgerton, and MacVicar awards present a more felicitous record with respect to women.[5] All of these awards and the Institute Professorships are based on faculty committee recommendations (see Table 8: Other Awards).

[5] MacVicar: 35 men, 5 women; Class of 1960 Fellows: 12 men, 4 women; Edgerton: 13 men, 7 women; Wade: 12 men, 7 women.

Table 7

SHASS Tabular Representation of Chair Holder by Chair and Unit

	CHAIR							SPVR
		FY95	FY96	FY97	FY98	FY99	FY00	
Economics								
32290	Killian	Fischer	Fischer	Joskow	Joskow	Joskow	Joskow	Provost
32292	Class of '41	Blanchard	Blanchard	Blanchard	Blanchard	Blanchard	Blanchard	Provost
32341	Ford	Dornbusch	Dornbusch	Dornbusch	Dornbusch	Dornbusch	Dornbusch	Dept.
32342	Ford	Ekaus	Ekaus	Krugman	Krugman	Krugman	Krugman	Dept.
32355	Gray	Temin	Temin	Temin	Temin	Temin	Temin	Provost
32412	MacDonald	Hausman	Hausman	Hausman	Hausman	Hausman	Hausman	Provost
32422	Mitsui	Joskow	Joskow	Poterba	Poterba	Poterba	Poterba	Provost
32468	Skinner	Piore	Piore	Piore	Piore	Piore	Piore	Provost
32475	Castle Krob CD	Gruber	Gruber	Gruber	Athey	Athey	Athey	Dept.
32498	Kouri CD	Kremer	Kremer	Kremer	Acemoglu	Acemoglu	Ventura	Dept.
32516	Samuelson	Diamond	Diamond	Diamond	Holmstrom	Holmstrom	Holmstrom	Dean
32373	Ford CD	Ellison	Ellison	Ellison	Costa	Costa	Costa	Dean
32262	Carlton					**1st**	Fisher	Dept.
Linguistics & Philosophy								
32443	Rockefeller	Thompson	Thompson	Stalnaker	Stalnaker	Stalnaker	Stalnaker	Provost
32570	Ward	Hale	Hale	Hale	Hale	Hale	Pesetsky	Dept.
32298	Class of 47 CD					Byrne	Byrne	Provost
32291	Class of 42 CD				Von Fintel	Von Fintel	Von Fintel	Provost
Political Science								
32346	Ford	Samuels	Samuels	Samuels	Samuels	Samuels	Samuels	Dept.
32500	Sloan		Cohen	Cohen	Cohen	Cohen	Cohen	Dept.
32322	Starbuck	**1st**	Berger	Berger	Berger	Berger	Berger	Provost
32299	Class of '57 CD					White		Provost
32391	Greene CD				Nobles	Nobles	Nobles	Provost
History								
32407	Kenan	Maier	Maier	Maier	Maier	Maier	Maier	Provost
32267	Conner	**1st**	Ritvo	Ritvo	Ritvo	Ritvo	Ritvo	Provost
32299	Class of '57 CD		Mccants	Mccants	Mccants			Provost
32266	Morison		**1st**	Dower	Dower	Dower	Dower	Provost
FL&L								
32297	Class of 58 CD	Widdig	Widdig	Widdig				Provost
32467	Kochi	**1st**	Miyagawa	Miyagawa	Miyagawa	Miyagawa	Miyagawa	Dean
32289	Class of '54 CD						Wey-Gomez	Provost
32439	Mitsui CD			Aikawa	Aikawa	Aikawa		Provost
32351	S. C. Fang							Dean
Literature								
32298	Class of 56 CD			Buzard	Buzard	Buzard		Provost
32349	Friedlaender	Donaldson	Donaldson	Donaldson	Donaldson	Jenkins	Jenkins	Dean
32291	Class of 42 CD	Jenkins	Jenkins	Jenkins				Provost
32299	Class of '57 CD						Raman	Provost
Music & TA								
32295	Class of '49			Harris	Harris	Harris	Harris	Provost
31085	Taylor	Thompson	Thompson	Thompson	Thompson	Thompson	Thompson	Provost
32288	Class of 48 CD					Makubuya	Makubuya	Provost
Anthropology								
32572	McMillan			**1st**	Slyomovics	Slyomovics	Slyomovics	Dean
STS								
32318	Dibner	Buchwald	Buchwald	Buchwald	Buchwald	Buchwald	Buchwald	Provost
32539	Dibner CD			Mindell	Mindell	Mindell	Mindell	Provost
32431	Mellon	Keniston	Keniston	Keniston	Keniston	Keniston	Keniston	Dept.
32275	Cutten	Smith	Smith	Smith	Smith	Smith	Smith	Provost
32319	Leo Marx CD					Riskin	Riskin	Provost
32298	Class of 47 CD		Hammonds	Hammonds	Hammonds			Provost
32298	Class of 56 CD	Fitzgerald						Provost
32426	Mauze						Turkle	Provost
Writing								
32281	Class of '22	Wolff	Wolff	Wolff	Wolff	Wolff	Wolff	Provost
32425	Meloy	Manning	Manning	Manning	Manning	Manning	Manning	Provost
32471	Metcalfe	Williams	Williams	Williams	Williams	Williams	Williams	Dean
32263	Burchard	**1st**	Lightman	Lightman	Lightman	Lightman	Lightman	Provost
Dean of SHSS								
32343	Ford	Berger						Dean
32344	Ford	Weiner	Weiner					Dean

Red=Women Chair holders

3/13/02

Table 8: Other Awards

Institute Professors (52)

	Men	**Women**	
Total	50	2	4% **Women**
SHASS	6	0	0% **SHASS women**
		0%	

1960 Fellows (16)

	M	**W**	
Total	12	4	25%
SHASS	3	1	25%
		25%	

Edgerton Professor (20)

	M	**W**	
Total	13	7	35%
SHASS	3	2	40%
		28%	

Killian (29)

	M	**W**	
Total	27	2	7%
SHASS	5	1	16%
		50**%**	

Wade (19)

	M	**W**	
Total	12	7	37%
SHASS	6	2	25%
		28%	

McVicar (40)

	M	**W**	
Total	36	4	10%
SHASS	4	2	33%
		50%	

Themes Emerging from Interviews

This section presents our findings from interviews with women faculty and male "comparables." These men and women reported their experiences and opinions, which can diverge from reality, and are always only one side of a story. Other parties often have rather different stories to tell, especially in cases involving conflict. Of the themes that emerged in our interviews some were directly gender-related, and some concerned issues only indirectly linked to gender (for example, having to do with the position of the humanities, arts and social science fields at MIT). The interviews contain an extremely wide range of opinions.

We found that a significant number of both female and male SHASS faculty interviewed feel marginalized and unappreciated within the science and engineering culture of MIT. Clearly a process of feminization partly accounts for the overall devalued status of SHASS, the School containing the largest number of women at the Institute, and containing the disciplines with the highest proportions of women nation-wide. A male "comparable" made this point bluntly and ironically: "We're all women in the sense that we are all second-class citizens in the larger scheme of MIT."

One of the most frequent comments in the interviews with women was a complaint about receiving insufficient professional support and advice from colleagues, in particular a tremendous lack of **mentoring**. An overall weak mentoring system was mentioned, as well as a scarcity of potential women mentors.

Most of the women who felt they had received adequate mentoring had male mentors, often men occupying high standing in the School hierarchy. The lack of women on School Council before 1984 was seen as unfortunate, as well as the continuing lack of women faculty in line positions on Academic Council. The scarcity of senior women in those positions results in very few role models for women coming up through the ranks, and an absence of women in administrative positions able to nurture and groom younger colleagues for leadership positions.

The issue of mentoring is linked closely to the pervasive reports regarding the **inadequate amounts of information** about navigating both the School and Institute. Interviewees reported instances of poor communication of important information to junior SHASS faculty, and many also felt that such information was distributed unequally. Both the gender roles acquired during socialization and the aspects of MIT culture encouraging entrepreneurial efforts were seen to result in male faculty being able to find and make use of these resources more easily. We heard of frustration and exasperation over difficulty in getting information about such important matters as how to get raises, promotions, chairs, leaves, research funds, course releases, housing assistance, and so forth. Some faculty reported hearing about deals negotiated with a department head, and felt that such opportunities should be clearly available to all. Most faculty who asked for additional assistance at the time of hiring and when considering outside offers were accommodated in some way, often with a compromise package, and felt they had been treated fairly in this regard.

Inadequate information was tied to a number of complaints about **decision-making** being overly hierarchical and "behind the scenes" in several units, in particular with respect to awarding of endowed chairs. Insufficiently democratic decision-making affects women disproportionately if they are excluded more than men, and a substantial number of interviewees indicated that this was the case. Complaints about favoritism and patron-client relationships also emerged in this regard. Within one unit, we were told, junior male peers were protected, given much more comprehensive information, assigned the more senior secretaries, and allowed to cut more deals for course release.

It is commonly known that one way, and at times the only way, to boost one's salary and prestige at MIT is to present the administration with an **outside offer** from another university at or above the caliber of MIT. Yet although many SHASS faculty women have received "nibbles" from other universities, very few have pursued them to the point of receiving an official offer of a position. Unless they're seriously considering moving, they say, obtaining such offers strikes them as "hustling," if not dishonest. We wonder whether the Institute perceives women faculty as less desirable, notwithstanding their scholarly and pedagogical accomplishments, if it rewards faculty who bring in outside offers more than it rewards those who are content to stay at MIT, and if male faculty hustle such offers more than female faculty (which is by no means established).

Both male and female faculty commented on the **unpleasant atmosphere** within which women faculty must work. Many interviewees felt that MIT still retains a "locker-room feeling," in which men welcome each other but are suspicious of, and at times hostile to, women, producing feelings of marginalization and alienation. This shows up in subtle but painful ways; for example, several women reported feeling that they were taken much less seriously than male counterparts, at department, School and Institute meetings. Complaints about the expectation that, as a woman, one is expected to defuse tense situations and smooth the way in a gracious manner also emerged, and several described feeling like a token, or invisible at Institute committee meetings.

Of course what produces such feelings are numerous: gender socialization, both male and female, is one important source. Women commented about feeling that they had had to be "good girls" if they were going to get the support of powerful senior men; others said they had to "pull rank"—assert their position in some fashion to receive appropriate responses from students or staff, which made them uncomfortable. Several women complained about being the target of sexual harassment or having seen it occur to a colleague. And several women spoke of the price they had to pay in their units because their concentration on their research resulted in their male colleagues not receiving the "milk and cookies" they expected from a woman.

Unconscious sexism is undoubtedly responsible for some of the treatment female faculty resent. Many commented that they were accorded less authority and respect, and treated dismissively by colleagues and administrators on a regular basis. Several complained that males with fewer credentials were treated better. A very articulate male interviewee spoke of all the ways male privilege continues in the academy: he could wear what he

wanted, he does not have to be considerate of others' feelings, rudeness in his male peers is more tolerated, he doesn't have to second-guess his colleagues when important decisions are being made (graduate admissions, hiring) nor worry about causing offense, he doesn't have to spend an extra 15% of his time looking out for his female peers. Finally, women are expected to be more involved in the "advocacy" aspects of his field, but this work is less valued.

Unfortunately, another source of difficulty for some women was an apprehension that their accomplishments were resented because of plain old envy, reporting that recognition seemed to elicit ambivalent feelings and indifferent behavior, or, worse, a punitive response. Would they be seen as threatening, as a reproach, and risking being labeled a "difficult older woman" if they complained about anything?

"Ghetto" was used more than once to describe how faculty in the arts and humanities side of the school feel about their place at MIT. "MIT culture" was the phrase sometimes employed. "There's one style, the hustling style, and if that is not your style, you are made to feel inferior." Insofar as these attitudes and behaviors are more acceptable and prevalent among men than women, SHASS women will feel more uncomfortable, more compromised, more isolated; both male and female interviewees made statements to this effect. Several feminist scholars complained about their research interests being dismissed by colleagues and administrators. Overall, interviewees indicated that the nation-wide feminization of their fields was heightened at a place like MIT. Language like "hard" and "soft" (for example, economics being hard and literature being soft) was gendered, pointed out one interviewee. A woman speculated that even if Academic Council had 50% women, perhaps not much would change because the mindset is so powerful.

Finally, attempts to right gender wrongs have, paradoxically but expectably, produced resentment. One male interviewee who had served as department head said that female associate professors were used too much by an administration concerned with visibility and diversity.

One interesting finding was that many women faculty in the doctoral programs seemed more dissatisfied than those in units teaching only undergraduate subjects. This dissatisfaction, if indeed greater, may be due to these departments being less "feminized" (we're all second-class citizens here), making the gender disparities more apparent. Also, being in prestigious departments may have led to higher expectations, and while they are aware that they have received more than their female colleagues in undergraduate-only units, perhaps they are more likely to perceive the disparity between what they are receiving and what their male peers are receiving.

We want to stress that most senior women felt that when they asked for material assistance, the School generally provided it and facilitated their research in other ways. Most women commented that they loved their work (although several also reported feeling isolated, bereft of colleagues with whom they could have stimulating and helpful discussions). That is, most women felt that on the one hand, the School made it possible

for them to conduct research and accomplish their scholarly goals; on the other hand, however, these same women bemoaned a lack of **community** both within the School and at the Institute overall. At times the stress was on the "SHASS ghetto" feature and at times their gender position took front stage.

When asked what they felt was the best thing about being at MIT, the vast majority of women interviewees mentioned either their students or their colleagues. Men gave these reasons as well, but several also mentioned freedom and the Institute's support for new ideas and new projects.

Discussion

Issues the Committee did not investigate, but which need further investigation

Three SHASS units (Music and Theater Arts, Foreign Languages and Literatures, and Writing and Humanistic Studies) depend heavily upon outside lecturers to teach their basic, required undergraduate subjects. Other units hire lecturers on a less frequent basis. Lecturers are clearly an important part of the MIT pedagogical enterprise, yet many part-time and junior lecturers' salaries do not reflect this importance. Nor do they have job security. The Committee feels that the status of lecturers needs serious investigation, particularly with respect to possible gender discrimination (for instance, are the part-time lecturer ranks more heavily female than the senior lecturer ranks?).

The Committee feels that understanding junior faculty experiences, especially women's, will help us place our findings concerning senior women's experiences into context. The differences between junior and senior women faculty experiences in the School of Science uncovered by that School's gender equity committee argue strongly for such investigations within SHASS.

A disjuncture exists between the number of women enrolled in the doctoral programs and the number of tenured women in the two largest departments with doctoral programs—Political Science and Economics. For example, in recent years roughly 25% of the PhD students in Economics have been women, while no more than 15% of the faculty have been women. Although not part of the Committee's charge, we recommend below that such "leakage in the pipeline" be investigated further.

The Committee was not able to compare the experiences of women minority faculty with other faculty in the School due to the small number of such tenured minority women (one). It is clear, however, that minority faculty face additional sets of problems that can have discriminatory effects in the School and at the Institute. Most notably, the extraordinary service demands placed on minority faculty and the instances of subtle racial discrimination they experience may not be fully recognized or understood by faculty and administrators.

Finally, the effectiveness of MIT's "Target of Opportunity" program for attracting senior women to the faculty needs to be fully evaluated. Especially for the departments with

PhD programs and few women faculty, there is a widespread view that the program is not well-matched to the way departments search for senior faculty or the financial realities that they face. Searches are typically field specific, while top women faculty are not equally distributed across fields. The requirement that all faculty slots be "full" to obtain financial support under the program is a further barrier. If MIT is really serious about attracting more senior women to these departments, a commitment about which several faculty interviewees expressed considerable doubt, simply making a specific number of fully financed slots available for appointments of senior or advanced junior women faculty to these departments, without all of the current contingencies and strings attached, would have a much higher probability of achieving results.

Reflections on the MIT system

Significantly affecting the figures on salaries is what Dean Khoury has informally referred to as the "star" system; an assumption that certain senior faculty members hold a "star" status granted to them by most, if not all, of their peers. As we understand the term, "stars" are more visibly marketable than their peers and as a result they are more likely to earn a higher salary, hold an endowed chair, have received significant outside recognition, and are regularly courted by other prestigious universities. We were informed by Dean Khoury that most of the top star salaries are earned by faculty who were hired as seniors, or, if they came up through the ranks, have negotiated higher salaries for themselves. That is, in both cases, the star MIT salaries have typically been generated through negotiating (either an offer to come to MIT or a response from an outside offer). However, having examined salary data from only one year this remains only an impression. In addition to the more numerous men, several senior women appear to be marketable in this sense; if this is so, their presence will significantly affect the aggregate salary figures for women in those units.

The finding that the salaries of the most senior women are not generally incommensurate with those of their male peers should not be surprising, given that they are so few in number. As many of the most prominent senior women in the School were hired into MIT as full professors, their salaries are quite high, just as they are for men who have advanced in similar ways. Being so few, these women's experiences are unlikely to be predictive of the experience of women who advance through the ranks. Hence, while comparable "star" men have very similar profiles, the overall picture for men is less deeply affected because of the greater numbers of male faculty in all SHASS units.

In the perception of the Committee, therefore, and of many of the interviewees, the acquisition of salary increases, chairs, research support, etc., partly depends on obtaining outside offers from other universities, and such outside offers have become increasingly important drivers at MIT over the last decade. To the extent that women are less willing to entertain outside offers, or are less mobile than their male counterparts for personal or family reasons, this trend must inevitably lead to gender discrimination in salaries and working conditions. Accordingly, we believe that it is important for MIT to expand the objective criteria upon which it evaluates faculty members for the purposes of determining salaries, chairs, and other benefits.

We noticed three different tenure patterns in SHASS. In some units, men and women have been tenured at more or less the same rate. Certain other originally male-heavy units have succeeded in increasing the number of senior women colleagues. When we looked at the interviews, what seemed to matter most in the units which have significantly changed the gender ratio in senior faculty was the presence of a senior female faculty member who worked to ensure that her younger female colleagues were supported in every way possible in their career trajectory, and therefore had the best chance at being awarded tenure. These same units also contain male senior faculty committed to creating equitable conditions in the shortest amount of time possible. Other male-heavy units have tenured one or two senior women, but the gender ratio remains lopsided. These units continue to hire junior women at a disappointingly low rate.

These findings support our wish to emphasize that while hiring and promoting more women is an important goal, perhaps equally important is the commitment on the part of all senior faculty to treat their younger female colleagues, junior and senior, with the same enthusiasm as they do their younger male colleagues. A senior faculty member who speaks out forcefully when unconscious sexism appears (and we received ample testimony in the interviews that such sexism continues to thrive) during informal conversations and department meetings (and at School Council and Academic Council) can accomplish wonders.

Our final reflection concerns the finding that women from SHASS are bearing much more than their fair share of MIT committee assignments. These burdens are especially inequitable in light of the relatively low salaries, relatively low promotion rates, and relatively high teaching loads of the SHASS units with the largest number of women. MIT must adopt policies which either spread these burdens out or provide compensation—released time from teaching—for excessive administrative/Institute service burdens, for in the present situation doing this disproportionate amount of service is not working to women's advantage, given the rewards system.

Recommendations

The Committee has collected data on senior SHASS faculty with respect to compensation and research funding, promotion and tenure, service to the School and Institute, and recognition by the School and Institute of scholarship, teaching and service in the form of awards. The School of Humanities, Arts and Social Sciences has recruited, recognized, and rewarded women faculty more than certain other MIT Schools. We found no discernible inequities in several of the areas we examined; in particular junior women faculty appear to be entering MIT on an equal footing with their male peers. However, much remains to be done to improve both the continuing structural inequities and, equally important, the overall climate in which SHASS men and women faculty interact and carry out their research and pedagogical activities. In this spirit we offer the following recommendations.

- Establish a permanent SHASS Gender Equity Committee with rotating membership and representative with respect to gender and field (i.e., humanities, arts and social sciences). This Committee will establish a School-wide policy and monitor adherence to it.

- Continue, or, better yet, increase the efforts to recruit outstanding women faculty at every rank. Given the gender proportions in many SHASS fields nation-wide, an overall percentage of 21% SHASS senior women faculty in AY02 can be improved. In particular Political Science and Economics should continue to be very proactive in this regard.

- Establish clear mentoring guidelines and require unit heads to assign mentors to all incoming faculty members. Provide mentors with training and ongoing advice about assisting their mentees in an appropriate and productive manner. The permanent Gender Equity Committee should continue discussions with regard to the two roles mentors play: intellectual (here the mentor works in the same field as the mentee) and administrative (this kind of mentor, an administrator, usually the department head, must be knowledgeable about MIT and SHASS policies and procedures with respect to promotion, leaves, funding, etc.). Mentors will be expected to meet with their mentees a specified number of times per year.

- Monitor faculty salaries to ensure equity between genders within units, adjusting for other support packages. Given that many studies[6] including those of other schools at MIT, have discerned systematic gender discrepancies in salary, in a given field or a given department, we recommend that extra vigilance be paid to this issue at every administrative level to ensure that no hidden discrimination is operating and that any discrepancies that appear are the result of acceptable differences (i.e., quality of scholarship, teaching excellence, etc.).

- Communicate to faculty the "rules of the game," especially surrounding issues of promotion and tenure. Ensure that *all* faculty, not just administrators and mentors, are able to communicate accurate information about School standards and expectations, and that they understand the seriousness of this responsibility.

- Communicate to all faculty in an open, clear, and comprehensive manner, any opportunities for research support, and encourage them to apply. Faculty applicants should indicate any other funding they have secured, and the Dean should take into consideration the available sources of outside funding.

[6] In "Gender differences in salary and promotion for faculty in the humanities, 1977-95" (*Federal Reserve Bank of Atlanta Working Papers*, 2001, 07, 69 pp.), Donna K. Ginther and Kathy Hayes conclude that gender discrimination in humanities salaries tends to operate through substantial differences in promotion rates, even after controlling for productivity and demographic characteristics.

- Apprise all faculty of every opportunity for forms of assistance in areas other than research, for example with housing, child care, and other kinds of assistance when special circumstances warrant.

- Create a reward structure within the units and School to encourage faculty who serve the School and the Institute on committees, and recognize them when they do.

- Ensure that distinguished female faculty in SHASS are nominated for Institute awards and chairs as well as prestigious awards beyond MIT.

- Create a visible and workable strategy for preparing senior women faculty to assume responsible leadership positions within the School and elsewhere in the Institute.

- Encourage department heads through the dean to exchange information about personnel practices.

- Remind senior faculty through the dean and department heads that fostering equity and community is the responsibility of *all* senior faculty.

- Collect and permanently retain comprehensive records on teaching loads, committee (including ad-hoc committee) assignments, advisee loads and other administrative responsibilities in both the department office and the Dean's Office.

- Keep more comprehensive records of Provost's Fund awards.

- Collect quantitative data on current junior faculty women and their male comparables as a means of understanding changes taking place over time within SHASS, and to keep an eye on pipeline issues.

- Sensitize faculty and administrators to the particularly difficult issues facing minority faculty.

- Provide more funding for recruiting senior and advanced junior women, without regard to field representation, to departments that have very low numbers of women.

- Collect quantitative and interview data on the status of women lecturers in SHASS.

Appendix I: Interview Questions

What were the circumstances of your coming to MIT?

- What stage of career
- How related to your personal situation
- Kind of negotiating with your department head or the dean
- Success at getting what you asked for or were promised

Have you received any special considerations from your department head or the dean (e.g., time off, course release, funding for travel, research, supplies/computers, housing, child-related expenses, etc)?

Have you been fairly treated, or overlooked with regard to departmental honors, opportunities, etc.?

Have department chores (e.g., advising, administration, hosting guests, sitting on committees) been equitably assigned, or have you been unduly burdened?

What has been the most difficult thing about being at MIT? Examples?

What has been the most positive thing? Examples?

How are decisions made in your department about

- Faculty hires
- Graduate admissions
- Curricular changes
- Invited speakers and colloquium
- Special initiatives/fundraising

Do you sense a gender or rank dimension to these decisions?

Are there ways in which men and women fare differently in your department overall, and if so, what are they?

Have you ever received an outside offer, and, if so, how was it handled by your department chair or the dean?

Have you seriously considered leaving MIT, and if so, why?

APPENDIX II.

SHASS REPRESENTATION ON INSTITUTE COMMITTEES
Faculty 10 year History: 1990 - 2000

I. Committee on Academic Performance

	Male	Female	
SHASS	3	3	6
Other Schools	23	2	25
N =	26	5	31

Note: 50% of SHASS members were female.
60% of women on the committee were from SHASS.

II. Committee on Corporate Relations

	Male	Female	
SHASS	3	1	4
Other Schools	22	1	23
N =	25	2	27

Note: 25% of SHASS members were female.
50% of women on the committee were from SHASS.

III. Committee on Curricula

	Male	Female	
SHASS	4	2	6
Other Schools	26	4	30
N =	30	6	36

Note: 33 1/3% of SHASS members were female.
33 1/3% of women on the committee were from SHASS.

IV. Committee on Discipline

	Male	Female	
SHASS	3	1	4
Other Schools	16	5	21
N =	19	6	25

Note: 25% of SHASS members were female.
17% of women on the committee were from SHASS.

V. Faculty Policy Committee

	Male	Female	
SHASS	1	6	7
Other Schools	31	7	38
N =	32	13	45

Note: 86% of SHASS members were female.
46% of women on the committee were from SHASS.

VI. Committee on Faculty Administration

	Male	Female	
SHASS	3	2	5
Other Schools	23	4	27
N =	26	6	32

Note: 40% of SHASS members were female.
33 1/3% of women on the committee were from SHASS.

VII. Committee on Graduate School Programs

	Male	Female	
SHASS	18	6	24
Other Schools	64	5	69
N =	83	11	94

Note: 25% of SHASS members were female.
55% of women on the committee were from SHASS.

VIII. Committee on the Library System

	Male	Female	
SHASS	5	3	8
Other Schools	18	2	20
N =	23	5	28

Note: 36% of SHASS members were female.
60% of women on the committee were from SHASS

IX. Committee on Nominations

	Male	Female	
SHASS	2	5	7
Other Schools	24	4	28
N =	26	9	35

Note: 71% of SHASS members were female.
56% of women on the committee were from SHASS.

X. Committee on Outside Professional Activities

	Male	Female	
SHASS	3	1	4
Other Schools	26	2	28
N =	29	3	32

Note: 25% of SHASS members were female.
33 1/3% of women on the committee were from SHASS.

XI. Committee on Student Affairs

	Male	Female	
SHASS	2	2	4
Other Schools	23	2	25
N =	25	4	29

Note: 50% of SHASS members were female.
50% of women on the committee were from SHASS.

XII. Committee on the Undergraduate Program

	Male	Female	
SHASS	4	4	8
Other Schools	35	6	41
N =	39	10	49

Notes: 50% of SHASS members were female.
40% of women on the committee were from SHASS.

XIII. Committee on Undergraduate Admissions & Financial Aid

	Male	Female	
SHASS	4	1	5
Other Schools	19	3	22
N =	23	4	27

Notes: 20% of SHASS members were female.
25% of women on the committee were from SHASS.

XIV. Killian Award Selection Committee

	Male	Female	
SHASS	6	5	11
Other Schools	27	5	32
N =	33	10	43

Notes: 45% of SHASS members were female.
50% of women on the committee were from SHASS.

XV. Edgerton Award Selection Committee

	Male	Female	
SHASS	3	5	8
Other Schools	22	5	27
N =	25	10	35

Notes: 63% of SHASS members were female.
50% of women on the committee were from SHASS.

Appendix III

SHASS Chair Statistical Breakdown by Unit and Year

SHASS										
CHAIRS	ASSISTANT		ASSOCIATE		ASSOCIATE		FULL		ALL RANKS	
FY96			WITHOUT TENURE		WITH TENURE					
	M	W	M	W	M	W	M	W	M	W
ECONOMICS	1	-	2	-	-	-	9	-	**12**	**-**
ANTHROPOLOGY	-	-	-	-	-	-	-	-	**-**	**-**
FL&L	-	-	1	-	-	-	1		**2**	**-**
HISTORY	-	-	-	1	-	-	-	2	**-**	**3**
LITERATURE	-	-	-	-	1	-	1	-	**2**	**-**
MUSIC & THEATER	-	-	-	-	-	-	1	-	**1**	**-**
LING. & PHILOS.	-	-	-	-	-	-	1	1	**1**	**1**
STS	-	1	-	-	-	-	3	-	**3**	**1**
POLITICAL SCIENCE	-	-	-	-	-	-	2	1	**2**	**1**
WRITING	-	-	-	-	-	-	2	2	**2**	**2**
ALL DEPARTMENTS	**1**	**1**	**3**	**1**	**1**	**-**	**20**	**6**	**25**	**8**

Appendix III

SHASS Chair Statistical Breakdown by Unit and Year

SHASS CHAIRS FY97	ASSISTANT		ASSOCIATE WITHOUT TENURE		ASSOCIATE WITH TENURE		FULL		ALL RANKS	
	M	W	M	W	M	W	M	W	M	W
ECONOMICS	-	-	3	-	-	-	9	-	**12**	**-**
ANTHROPOLOGY	-	-	-	-	-	-	-	-	**-**	**-**
FL&L	-	1	1	-	-	-	1	-	**2**	**1**
HISTORY	-	-	-	1	-	-	1	2	**1**	**3**
LITERATURE	-	-	1	-	1	-	1	-	**3**	**-**
MUSIC & THEATER	-	-	-	-	-	-	1	1	**1**	**1**
LING. & PHILOS.	-	-	-	-	-	-	2	1	**2**	**1**
STS	1	1	-	-	-	-	3	-	**4**	**1**
POLITICAL SCIENCE	-	-	-	-	-	-	2	1	**2**	**1**
WRITING	-	-	-	-	-	-	2	2	**2**	**2**
ALL DEPARTMENTS	**1**	**2**	**5**	**1**	**1**	**-**	**22**	**7**	**29**	**10**

Appendix III

SHASS Chair Statistical Breakdown by Unit and Year

SHASS										
CHAIRS	ASSISTANT		ASSOCIATE		ASSOCIATE		FULL		ALL RANKS	
FY98			WITHOUT TENURE		WITH TENURE					
	M	W	M	W	M	W	M	W	M	W
ECONOMICS	-	1	1	1	-	-	9	-	**10**	**2**
ANTHROPOLOGY	-	-	-	-	-	-	-	1	**-**	**1**
FL&L	-	1	-	-	-	-	1	-	**1**	**1**
HISTORY	-	-	-	1	-	-	1	2	**1**	**3**
LITERATURE	-	-	1	-	-	-	1	-	**2**	**-**
MUSIC & THEATER	-	-	-	-	-	-	1	1	**1**	**1**
LING. & PHILOS.	1	-	-	-	-	-	2	-	**3**	**-**
STS	1	1	-	-	-	-	3	-	**4**	**1**
POLITICAL SCIENCE	-	1	-	-	-	-	2	1	**2**	**2**
WRITING	**-**	**-**	**-**	-	**-**	**-**	2	2	**2**	**2**
ALL DEPARTMENTS	**2**	**4**	**2**	**2**	**-**	**-**	**22**	**7**	**26**	**13**

Appendix III

SHASS Chair Statistical Breakdown by Unit and Year

SHASS										
CHAIRS	ASSISTANT		ASSOCIATE		ASSOCIATE		FULL		ALL RANKS	
FY99			WITHOUT TENURE		WITH TENURE					
	M	W	M	W	M	W	M	W	M	W
ECONOMICS	-	1	1	1	-	-	9	-	**10**	**2**
ANTHROPOLOGY	-	-	-	-	-	-	-	1	**-**	**1**
FL&L	-	1	-	-	-	-	1	-	**1**	**1**
HISTORY	-	-	-	-	-	-	1	2	**1**	**2**
LITERATURE	-	-	-	-	1	-	1	-	**2**	**-**
MUSIC & THEATER	1	-	-	-	-	-	1	1	**2**	**1**
LING. & PHILOS.	1	-	1	-	-	-	2	-	**4**	**-**
STS	1	1	-	-	-	-	3	-	**4**	**1**
POLITICAL SCIENCE	1	1	-	-	-	-	2	1	**3**	**2**
WRITING	-	-	-	-	-	-	2	2	**2**	**2**
ALL DEPARTMENTS	**4**	**4**	**2**	**1**	**1**	**-**	**22**	**7**	**29**	**12**

Appendix III

SHASS Chair Statistical Breakdown by Unit and Year

SHASS										
CHAIRS	ASSISTANT		ASSOCIATE		ASSOCIATE		FULL		ALL RANKS	
FY00			WITHOUT TENURE		WITH TENURE					
	M	W	M	W	M	W	M	W	M	W
ECONOMICS	1	-	1	1	-	-	10	-	**12**	**1**
ANTHROPOLOGY	-	-	-	-	-	-	-	1	**-**	**1**
FL&L	-	-	1	-	-	-	1	-	**2**	**-**
HISTORY	-	-	-	-	-	-	1	2	**1**	**2**
LITERATURE	-	-	1	-	-	-	1	-	**2**	**-**
MUSIC & THEATER	1	-	-	-	-	-	1	1	**2**	**1**
LING. & PHILOS.	1	-	1	-	-	-	2	-	**4**	**-**
STS	1	1	-	-	-	-	3	-	**4**	**1**
WRITING							2	2	**2**	**2**
POLITICAL SCIENCE	1	-	-	-	-	-	2	1	**3**	**1**
ALL DEPARTMENTS	**5**	**1**	**4**	**1**	**-**	**-**	**23**	**7**	**32**	**9**

Appendix IV

Levitan Prize Statistical Breakdown by Unit and Year

Levitan Prize		ASSISTANT		ASSOCIATE		ASSOCIATE		FULL		ALL RANKS	
FY96				WITHOUT TENURE		WITH TENURE					
		M	W	M	W	M	W	M	W	M	W
ECONOMICS	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
ANTHROPOLOGY	Requests	-	-	-	-	-	-	1	-	1	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
FL&L	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
HISTORY	Requests	-	1	-	-	-	-	-	-	-	1
	Awards	-	1	-	-	-	-	-	-	-	1
	Mean award amount	-	20,000	-	-	-	-	-	-	-	20,000
LITERATURE	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
MUSIC & THEATER	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
LITERATURE	Requests	-	-	-	-	-	-	2	-	2	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
LING. & PHILOS.	Requests	-	-	-	-	-	-	1	-	1	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
POLITICAL SCIENCE	Requests	1	-	-	-	-	-	-	-	1	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
STS	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
WRITING	Requests	-	-	-	-	-	-	-	1	-	1
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
ALL DEPARTMENTS											
REQUESTS		1	1	-	-	-	-	4	1	5	2
AWARDS		-	1	-	-	-	-	-	-	-	1
MEAN AWARD		-	20,000	-	-	-	-	-	-	-	20,000

Appendix IV

Levitan Prize Statistical Breakdown by Unit and Year

Levitan Prize		ASSISTANT		ASSOCIATE		ASSOCIATE		FULL		ALL RANKS	
FY97				WITHOUT TENURE		WITH TENURE					
		M	W	M	W	M	W	M	W	M	W
ECONOMICS	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
ANTHROPOLOGY	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
FL&L	Requests	-	-	1	-	-	-	-	-	1	-
	Awards	-	-	1	-	-	-	-	-	1	-
	Mean award amount	-	-	20,000	-	-	-	-	-	20,000	-
HISTORY	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
LITERATURE	Requests	-	-	-	1	-	-	1	-	1	1
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
MUSIC & THEATER	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
LITERATURE	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
LING. & PHILOS.	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
POLITICAL SCIENCE	Requests	2	-	-	-	1	-	-	-	3	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
STS	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
WRITING	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
ALL DEPARTMENTS											
REQUESTS		2	-	1	1	1	-	1	-	5	1
AWARDS		-	-	1	-	-	-	-	-	1	-
MEAN AWARD		-	-	20,000	-	-	-	-	-	20,000	0

Appendix IV

Levitan Prize Statistical Breakdown by Unit and Year

Levitan Prize		ASSISTANT		ASSOCIATE		ASSOCIATE		FULL		ALL RANKS	
FY98				WITHOUT TENURE		WITH TENURE					
		M	W	M	W	M	W	M	W	M	W
ECONOMICS	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
ANTHROPOLOGY	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
FL&L	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
HISTORY	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
LITERATURE	Requests	-	-	-	-	-	-	1	-	1	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
MUSIC & THEATER	Requests	-	-	-	1	-	-	-	-	-	1
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
LITERATURE	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
LING. & PHILOS.	Requests	1	-	-	-	-	-	-	-	1	-
	Awards	1	-	-	-	-	-	-	-	1	-
	Mean award amount	20,000	-	-	-	-	-	-	-	20,000	-
POLITICAL SCIENCE	Requests	2	-	-	-	-	-	-	-	2	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
STS	Requests	1	-	-	-	-	-	-	-	1	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
WRITING	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
ALL DEPARTMENTS											
REQUESTS		4	-	-	1	-	-	1	-	5	1
AWARDS		1	-	-	-	-	-	-	-	1	-
MEAN AWARD		20,000	-	-	-	-	-	-	-	20,000	-

Appendix IV

Levitan Prize Statistical Breakdown by Unit and Year

Levitan Prize		ASSISTANT		ASSOCIATE		ASSOCIATE		FULL		ALL RANKS	
FY99				WITHOUT TENURE		WITH TENURE					
		M	W	M	W	M	W	M	W	M	W
ECONOMICS	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
ANTHROPOLOGY	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
FL&L	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
HISTORY	Requests	-	-	-	-	-	1	-	-	-	**1**
	Awards	-	-	-	-	-	1	-	-	-	**1**
	Mean award amount	-	-	-	-	-	20,000	-	-	-	**20,000**
LITERATURE	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
MUSIC & THEATER	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
LITERATURE	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
LING. & PHILOS.	Requests	1	-	-	-	-	-	-	-	**1**	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
POLITICAL SCIENCE	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
STS	Requests	1	-	-	-	-	1	-	-	**1**	**1**
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
WRITING	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
ALL DEPARTMENTS											
REQUESTS		**2**	**-**	**-**	**-**	**-**	**2**	-	-	**2**	**2**
AWARDS		**-**	**-**	**-**	**-**	**-**	**1**	-	-	**-**	**1**
MEAN AWARD		**-**	**-**	**-**	**-**	**-**	**20,000**	-	-	**-**	**20,000**

Appendix IV

Levitan Prize Statistical Breakdown by Unit and Year

Levitan Prize		ASSISTANT		ASSOCIATE		ASSOCIATE		FULL		ALL RANKS	
FY00				WITHOUT TENURE		WITH TENURE					
		M	W	M	W	M	W	M	W	M	W
ECONOMICS	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
ANTHROPOLOGY	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
FL&L	Requests	-	-	-	-	-	-	-	1	-	1
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
HISTORY	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
LITERATURE	Requests	-	-	-	-	1	-	-	-	1	-
	Awards	-	-	-	-	1	-	-	-	1	-
	Mean award amount	-	-	-	-	20,000	-	-	-	20,000	-
MUSIC & THEATER	Requests	1	-	-	-	-	-	-	-	1	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
LITERATURE	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
LING. & PHILOS.	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
POLITICAL SCIENCE	Requests	-	-	1	-	-	-	-	-	1	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
STS	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
WRITING	Requests	-	-	-	-	-	-	-	-	-	-
	Awards	-	-	-	-	-	-	-	-	-	-
	Mean award amount	-	-	-	-	-	-	-	-	-	-
ALL DEPARTMENTS											
REQUESTS		1	-	1	-	1	-	-	1	3	1
AWARDS		-	-	-	-	1	-	-	-	1	-
MEAN AWARD		-	-	-	-	20,000	-	-	-	20,000	-

Report of the Sloan School of Management

Reports of the Committees on the Status of Women Faculty

March 2002
Massachusetts Institute of Technology

Statement from the Dean of the Sloan School of Management

At the MIT Sloan School, we teach future leaders that diversity can strengthen any organization by bringing more perspectives into deliberation and decision-making processes. We also teach them that this is not automatic: unless a culture of mutual respect and awareness is nurtured, diversity can be divisive and crippling. Until I read the report of the Sloan Gender Committee, I believed that we practiced what we preached.

I was well aware that our faculty has been less diverse on several dimensions than our student body, and that this has made Sloan less than it could be. But I had believed that as an institution we were working to increase diversity, in particular by trying hard to recruit more women to our faculty. I also believed that our culture accommodated diversity well, at least along the dimension of gender. After all, male and female faculty here have similar backgrounds, speak the same jargons, and seem to share a strong commitment to equality of opportunity. As scholars interested in improving organizational performance, we condemn glass ceilings and other forms of discrimination, and I have never heard a male colleague even suggest that women should be treated less well than men.

Thus when the Sloan Gender Committee began its work in 1999, I did not expect it to uncover much beyond the troublesome and persistent fact that we have fewer women, particularly senior women, than we should. I certainly did not expect to find that female faculty work at a different and less supportive Sloan School than their male colleagues.

The Committee did find some troublesome quantitative indicators. Despite what I had thought were serious efforts, we had not noticeably increased the representation of women on our faculty over the previous decade. I believe we hire and promote with good intentions, but the data make it clear that good intentions alone will not solve this problem. In addition, careful statistical analysis of salary data yielded some problematic results. This analysis has informed salary determination in subsequent years, to the benefit of some female and some male faculty. The finding that women on average take longer to be promoted to Full Professor than men is in some ways the most disturbing quantitative result. An important reason for this difference, though surely not the only one, is that women have been more likely than men, all else equal, to decide that they are not ready to be evaluated at this stage. This hints at serious cultural issues.

By far the most surprising aspect of the Committee's work is its profoundly disturbing analysis of faculty experience. This analysis makes it inescapably clear that in our culture, men and women faculty with outwardly very similar careers are, in effect, working at two different Schools and that the women are at a much less congenial and supportive Sloan than the men. These differences and the cultural issues they reveal were the focus of the senior faculty's discussion of the Gender Committee's report. This was an illuminating but ultimately very frustrating discussion. To use an antique term, there was much consciousness-raising. It was easy to generate consensus behind most of the

Committee's recommendations, and we have moved to implement most of them. But nobody believed that doing so would close the cultural divide the Report revealed. Until we can learn how to close this divide and actually close it, until men and women faculty work at the same Sloan School, we will not produce enduring solutions to our other problems of diversity.

I do not believe the cultural problems revealed by the Sloan Gender Committee are unique to Sloan; the other Schools' Committee reports are strikingly similar along this dimension. Nor do I believe these problems are unique to MIT or even to US universities. I think the pioneering work done on gender equity at Sloan and elsewhere at MIT makes it clear that as a society we have a long way to go before women are fully equal in the workplace.

I am deeply grateful to the members of Sloan's Gender Committee for giving us a clear and objective picture of a culture that is indefensible. Now – as people of conscience and as leaders – we must commit ourselves to the difficult but unavoidable task of changing that culture.

Richard Schmalensee
John C Head III Dean
MIT Sloan School of Management
March 2002

REPORT OF THE GENDER COMMITTEE
SLOAN SCHOOL OF MANAGEMENT
MIT

March 2002

Deborah Ancona
Paul Asquith
Lotte Bailyn (chair)
Wanda Orlikowski
John Sterman
Roy Welsch
JoAnne Yates

Introduction

During the academic year 1999-2000, the Sloan Gender Committee collected data on the Sloan faculty in the following areas: the pipeline; salary; promotion and tenure rates and timetables; and faculty experience. Since 1991, women have increased from 7% to 10% of the senior faculty. At the same time, we found evidence of some important inequities. We were particularly concerned that in all areas of reported experience women were consistently more alienated and felt less empowered and more marginalized than a paired group of men.

The committee made a number of recommendations, both for the committee and to the Dean, a number of which have been put into place. In particular, the salary gap previously identified is considerably less.

Background

After the release of the Report on the Women Faculty in Science and the extraordinary media response it produced, the Provost asked each of the Deans to appoint a committee to look into the experience of the women faculty in their School.

At Sloan, the process started with a meeting of the tenured women faculty, who suggested to the Dean the members of the gender committee, which he accepted. A report was given to the Dean in the spring of 2001. Thereafter a summary report was prepared which was discussed at the Personnel Committee.

Pipe line, promotion and tenure, and salary data were provided by the School and analyzed by sub-groups of the committee. To gather data on faculty experience, the committee interviewed all tenured women faculty and a matched pair of male faculty. The matching was done by the committee and attempted, as much as possible, to match field and career stage. The matched male faculty were also interviewed.

The interviews, each conducted by one male and one female member of the committee, were guided by an interview protocol (see Appendix B) but were relatively unstructured. They were then coded independently by a male and female member of the committee into categories that emerged from them (see Appendix A).

Pipeline

Table 1 gives the number and percentage of women among the junior and senior faculty at Sloan from 1991 through 2001:

		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Senior	# women	3	3	4	4	5	6	7	6	6	6	6
	% women	7% (n=45)	6% (n=49)	8% (n=49)	8% (n=50)	10% (n=52)	10% (n=53)	12% (n=56)	11% (n=57)	11% (n=56)	10% (n=58)	10% (n=62)
Junior	# women	8	10	10	9	7	8	5	6	7	5	8
	% women	22% (n=37)	26% (n=39)	24% (n=41)	26% (n=35)	27% (n=30)	29% (n=28)	26% (n=19)	22% (n=27)	23% (n=31)	17% (n=29)	23% (n=35)
Total	# women	11	13	14	13	13	14	12	12	13	11	14
	% women	13% (n=82)	15% (n=88)	16% (n=90)	15% (n=85)	16% (n=82)	17% (n=81)	16% (n=75)	14% (n=84)	15% (n=87)	13% (n=87)	14% (n=97)

Note: The total number of men and women faculty in any given category is given in the parentheses.

The decline in percentage female from 23% junior faculty to 10% senior faculty is typical of the distribution in other fields and at other universities, a phenomenon called the leaking pipeline. It is possible, however, that the age distribution of the faculty is not yet in equilibrium and the full professor ranks are skewed by older cohorts consisting almost entirely of men. In order partially to account for this, we eliminated from the percentages all current faculty members who in 1989-90 were already full professors (1 woman and 33 men). This increased the percentage of women among the senior faculty in 2000-2001 to 18%, which brings it more in line with the junior faculty figure of 23%. The percentage of PhDs awarded to women over the last three years is 28%. So, even after accounting for the age distribution of full professors, there is still evidence that the proportion of women declines as one moves up the career ladder.

Salary

We examined the nine-month salary data for the academic years 1995-1996 through 1999-2000. We included age, rank, gender, academic field, and Deans' Office experience (i.e., whether a faculty member had served in the Deans' Office) and fit a least-squares model to the total population. For the year 1999-2000, we were able to account for 75% of the variance in salaries with this model. Rank, field, and Deans' Office experience were the strongest predictors. Eight women fell below the estimated line and three fell above the line. There were five positive outliers (greater than one-and-a-half standard deviations above estimated values), all of them men. The average of the women's actual salaries was 9% less than the average of their predicted values from this model.

(For the current academic year, 2001-2002, there has been improvement. For this model, in the current year, half the women (8) are above and half (7) below their predicted values, and the positive outlier group is no longer exclusively, though still predominantly male. Moreover, the average actual salary of the women is essentially the same as the average predicted salary.)

Since using this approach compares women faculty to a model that already includes them, a new model was fitted just to the male population. The male model accounts for 75% of the variance in men's salaries. When women's salaries are estimated on the basis of this model, the actual salary of all eleven women falls below their predicted salary. The average of the women's actual salaries was 16% less than the average of their predicted values. This difference does not include the cumulative effect of salary on future increases and pension accrual.

(Here, too, there is improvement. 6 of the women are above their predicted line and 9 are below. And, again, the average of the women's actual salaries is essentially the same as the average of their predicted values.)

Promotion and Tenure

We compiled information on promotion and tenure for faculty appointed as assistant professors starting in 1982. Our data were incomplete for the earliest years, and the findings represent the best assessment based on available data.

We examined the tenure rates based on these data, and found that the rate of tenure is comparable for women and men. Average times between ranks are based on all of those who actually attained the higher rank. Based on these data, the average time that it took women faculty to be promoted from Assistant Professor to Associate Professor without tenure was 4.3 years. The men, on average, took 4.6 years to attain this first promotion, a slight difference in favor of the women. Timing between associate professor without tenure and tenure is essentially the same: 2.2 years for the women, 2.1 years for the men.

The difference in timing between tenure and promotion to Full Professor, on the other hand, is considerably larger. Based on the same principle of calculation, the women took on average 5.0 years, as compared to 3.0 years for the men. Obviously, this difference has not only a status but also a compensation implication.

Faculty Experience

To evaluate faculty experience, the committee interviewed all 6 tenured women faculty. In addition, for each woman interviewed, a matched male faculty member was also interviewed. The committee attempted, as much as possible, to match field and career stage.

These interviews were fairly open-ended and were coded on ten different categories of experience that emerged from them. These covered areas such as experience at entry; mentoring and coaching through the tenure process; feelings of being valued, empowered, and belonging; experience of teaching (see Appendix A on exact methods and coding categories).

With 6 pairs and 10 dimensions there are a total of 60 comparisons that can be made. They fall out in the following way:

Man rated higher than the woman	40
Woman rated higher than the man	0
Both rated equally	17
Missing data	3

There is no doubt that the reported experience of the women faculty is considerably more negative than that of the men.

We found a big difference particularly between the feelings of access, empowerment, and belonging of the men and the women faculty. None of the men had a fully negative experience on these dimensions; only one woman had a clearly positive experience. We also found a difference on the experience at entry. Half of the senior women reported a negative experience with entry, in contrast to none of the men. Since experience at entry can be determining for what happens afterwards, this difference can have long-lasting effects.

Conclusion

As these findings make clear, there are identifiable differences in the compensation and reported experiences of men and women faculty members at Sloan. In compensation, the women lag the men, even though there has been improvement over the last two years. Nonetheless, when combined with the slower rate of promotion to full professor, these differences when extended through a normal career (including benefits, pension, etc.) could accumulate to a considerable sum. But it is the difference in experience that is the most striking. The men revealed a consistently more positive experience along a variety of dimensions, from mentoring and informal social contacts to committee work and feelings of power. The senior women faculty just do not feel as at home, or as valued, as was true for their male pairs.

Recommendations

We have recommendations both for the Gender Committee and for the Deans' Office.

1. Keep the Gender Committee active with rotating membership. Its activities should include the following:

    - Monitor and track salaries annually and report results to the Dean every January, prior to salary decisions. Keep a senior woman faculty member involved in this process. *(Done)*

    - Continue to track the experiences of the senior women faculty, establishing metrics by which to monitor progress. *(In progress)*

    - Initiate and regularly monitor the experiences of the junior women faculty. *(In progress)*

    - Create opportunities for conversation about gender issues.

2. The Deans' Office should undertake the following policies and actions:

    - Take the annual salary data provided by the gender committee and work towards redressing inequities in salary. *(In progress)*

    - Consider female candidates for positions and roles that could lead to Dean's Office posts. *(In progress)*

    - Put processes in place, in coordination with the Gender Committee, that will allow the monitoring of committee memberships, including committees that deal with resources; review, promotion, and tenure committees; program review committees; etc.

    - Have the Dean talk individually to every tenured faculty member not later than 3 years after receiving tenure to assess the readiness for promotion to full professor. Pay particular attention to the female faculty.

    - Make information available to current faculty and recruits about the kinds of resources that are available or may be the subject of negotiation.

    - Keep gender in mind in considering all ways in which Sloan presents itself, from presentations at faculty meetings to announcements of programs to listings for conferences, to ensure that women and men, if involved, are both represented.

Appendix A: Methods for Faculty Experience Study

The interviews, each conducted by one male and one female member of the committee, were written up by one of the interviewers and checked by the other one. Each interviewee was also given a chance to review the transcript before it was shared with the rest of the committee.

The committee read through these interviews and came up with a number of themes that seemed to emerge. These were divided into three categories as follows:

Category I:

Experience at entry, extent of welcome
Mentoring and coaching, particularly around tenure
Post-tenure experience
Amount of negotiation post entry

Category II:

Access to central administration, feeling one is an asset, adding value
Sense of empowerment with and respect from colleagues
Sense of belonging, as opposed to isolation, alienation, marginalization

Category III:

Teaching, relation to students
Workload equity
Support, within school and from outside

The final ratings were determined by a pair of raters (one male and one female member of the committee) randomly assigned to each category. They separately coded each of the dimensions for each of the interviews, and then compared their ratings. If there was disagreement and they could not decide, it was taken to the whole committee for resolution.

Each dimension was coded as ✓, ✓+, or ✓-. The whole interview was used to make these decisions. A check meant an average experience, with a check plus indicating a better than average experience, and a check minus indicating a worse than average experience. For example:

"I feel that I still need to demonstrate that I belong here" – coded ✓- for sense of belonging

"I feel connected to the power structure of the school. On committees, I think my voice is heard" – coded ✓+ for access to power

Appendix B: Interview Protocol

1. Open-ended: how did you get to MIT, what's happened since then? (e.g., key milestones)

2. What is the worst -- and best -- experience you've had at Sloan (whether professionally, interpersonally, etc.)?

3. What is the worst thing you've observed happen to someone else at Sloan?

4. Are there specific experiences or instances where you think being a woman/man has helped or hindered you at Sloan?

5. Specific prompts (where necessary):

   teaching: teaching experiences, student reactions

   relations to Sloan:
   resources, non-point work (committees, secondary helping and advising with no formal recognition), mentoring, and feedback

   power and self-esteem:
   negotiation experiences, feelings of marginalization and respect, meeting experiences (e.g., do you have a voice?)

   relations with senior staff: experiences, contacts

   informal social contacts:
   dinners, lunches, sports (jogging, tennis, squash, etc.)

   other: ease of paper submissions and reactions to responses (both formal to journals and informal to colleagues); seminar presentations

6. Have you had any experience with harassment at Sloan?

7. Who at Sloan do you think is comparable to you in terms of career and work experiences?

Report of the School of Science

(2002 update, 1999 report)

Reports of the Committees on the Status of Women Faculty

March 2002
Massachusetts Institute of Technology

Comments from Professor Robert J. Silbey, Dean of the School of Science

The 1999 report of the Women Faculty in the School of Science was a "wake-up call" to the faculty of MIT and has had a number of positive effects since its publication. The report found an unequal distribution of resources between male and female faculty in every variable that was measured: lab space, salaries, proportion of funding from the Institute, and nominations for prizes. Once this was recognized, Dean Birgeneau was able to effect changes mitigating most of these problems. However, the issue of the marginalization, experienced by almost every woman faculty member, is a more difficult problem but one which we are working to remedy.

Marginalization is, in part, a consequence of the absence of women from the "corridors of power", e.g. the School Council, important committees in the departments, and directorships etc. Since 1999, there has been a concerted effort to change this situation. In 1994, there were no women administrators; there are now six women occupying important administrative positions in the School of Science: Professor Susan Lindquist is the Director of the Whitehead Institute for Biological Research. Professor Nancy Hopkins is a member of the Academic Council, the highest academic committee on campus and the Co-chair of the Council on Diversity. The Directors of the two largest research laboratories in the School, the Laboratory of Nuclear Science (LNS) and the Center for Space Research (CSR) are Professor June Matthews and Professor Jacqueline Hewitt, respectively. Professor Tania Baker is the Associate Head of the Department of Biology, and Professor Jacqueline Lees is Associate Director of the Center for Cancer Research. These women are excellent scholars, teachers and administrators, in the best tradition of MIT. Their voices are being heard.

Marginalization is also a numerical issue that becomes a social and professional problem: the small number of women faculty often leads to a more restricted network of interactions for those women. The School of Science is committed to a sustained effort to increase this number. We increased the number of women faculty, but more slowly than we had hoped. As of 2002, there were 22 tenured and 11 untenured women faculty members out of a total of about 265. We will work to increase this number substantially in the coming years.

As Dean Birgeneau said in the introduction to the 1999 report, these are attempts to reverse the effects of decades of discrimination, but we still have a great deal more to accomplish before true equality and equal treatment will be achieved. The energy and commitment of our women faculty, and as importantly their willingness to pursue what was at the time a difficult and unpopular position, initiated fundamental changes in the School of Science. To honor their bravery and tenacity, we must pursue with equal energy and determination the unfinished agenda.

Number of Women in the School of Science, MIT

	Tenured Faculty		Untenured Faculty		Administration	
	1994	**2001**	**1994**	**2001**	**1994**	**2001**
Biology	5	9	3	2	0	4
Brain and Cog	4	4	0	2	0	0
Chemistry	2	3	0	1	0	0
EAPS	3	3	1	0	0	0
Math	0	1	1	2	0	0
Physics	1	2	2	3	0	2
Total	**15**	**22**	**7**	**10**	**0**	**6**

The MIT Faculty Newsletter

Vol. XI No. 4 **March 1999**

Special Edition

A Study on the Status of Women Faculty in Science at MIT:

How a Committee on Women Faculty came to be established by the Dean of the School of Science, what the Committee and the Dean learned and accomplished, and recommendations for the future

Members of the First and Second Committees on Women Faculty in the School of Science

First Committee (1995-1997)

Sallie W. Chisholm - CEE and Biology
Jerome I. Friedman - Physics (department Head)
Nancy Hopkins - Biology (Committee Chair)
Daniel Kleitman - Mathematics (former department Head)
June L. Matthews - Physics
Mary C. Potter - BCS
Paola M. Rizzoli - EAPS (served 7/95-)
Leigh Royden - EAPS (served 2/95-7/95)
Robert J. Silbey - Chemistry (department Head)
JoAnne Stubbe - Chemistry and Biology

Second Committee (1997-1999)

Sylvia T. Ceyer - Chemistry
Sallie W. Chisholm - CEE and Biology
Jerome I. Friedman - Physics (former department Head)
Jacqueline N. Hewitt - Physics
Kip V. Hodges - EAPS
Nancy Hopkins - Biology
Mary C. Potter - BCS (Committee Chair)
Paola M. Rizzoli - EAPS
Robert J. Silbey - Chemistry (former department Head)

Outline

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- **Introduction (P. 4)**
- **Establishing a Committee on Women Faculty in the School of Science (P. 5)**
- **Committee membership and how the Committee operated (P. 6)**
- **What the Committee learned (P. 7)**
- **What the Committee recommended (P. 10)**
- **Real progress: What the Dean did to improve the status and equitable treatment of senior women faculty and to increase the number of women faculty in the School of Science (P. 10)**
- **How did inequities come about? "Gender discrimination" in 1999 (P. 11)**
- **Long term solutions - "Affirmative actions" for 1999 (P. 12)**
- **Summary from the first report of the Committee on Women Faculty in the School of Science – 1996 (P. 13)**
- **Recommendations made to the MIT administration in the first report of the Committee onWomen Faculty in the School of Science – 1996 (P. 14)**

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Introductory Comments: Dean Robert J. Birgeneau — Page 2
From The Faculty Chair: Professor Lotte Bailyn — Page 3

http://web.mit.edu/fnl

Introductory Comments

President Charles M. Vest

I commend this study of Women Faculty in Science to all of my faculty colleagues. Please read it, contemplate its messages and information, and act upon it personally and collectively.

I learned two particularly important lessons from this report and from discussions while it was being crafted. First, I have always believed that contemporary gender discrimination within universities is part reality and part perception. True, but I now understand that reality is by far the greater part of the balance. Second, I, like most of my male colleagues, believe that we are highly supportive of our junior women faculty members. This also is true. They generally are content and well supported in many, though not all dimensions. However, I sat bolt upright in my chair when a senior woman, who has felt unfairly treated for some time, said "I also felt very positive when I was young."

We can take pride in the candor of dialog that these women have brought to this issue and in the progress that we have made, but much remains to be done. Our remarkably diverse student body must be matched by an equally diverse faculty. Through our institutional commitment and policies we must redouble our efforts to make this a reality.✣

[Charles M. Vest can be reached at cmvest@mit.edu]

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Introductory Comments

Dean Robert J. Birgeneau

This article in the *Faculty Newsletter* describes the efforts of an extraordinary group of women faculty in the School of Science to understand and ameliorate the long-term effects of discrimination in academia. I believe that in no case was this discrimination conscious or deliberate. Indeed, it was usually totally unconscious and unknowing. Nevertheless, the effects were and are real. Some small steps have been taken to reverse the effects of decades of discrimination, but we still have a great deal more to accomplish before true equality and equal treatment will have been achieved.

Currently, our undergraduate body at MIT reflects reasonably well the remarkable diversity and richness of the American population. Our faculty, on the other hand, remains overwhelmingly white male. This, of course, means that we are not taking advantage of the tremendous talents of the absolute majority of the population in filling our faculty ranks. This is to the detriment of the students, the faculty, and MIT as a whole. Correcting this extreme imbalance is one of the major challenges that MIT faces as we enter the next millenium. This report is a critical first step in that process. I congratulate our School of Science women faculty for their courage and conviction in initiating this process.✣

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From The Faculty Chair

Momentum of Report Needs to be Extended to Entire Institute

Lotte Bailyn

This report on the work of the Committees on Women Faculty in the School of Science and the response of the Dean to their findings, describes a model that can be used by the Institute as a whole to decrease the inequities that still exist, both in terms of numbers and in treatment. And though these data refer to women, the methods used and recommendations made can and should be adapted to faculty from under-represented minorities.

The key conclusion that one gets from the report is that gender discrimination in the 1990s is subtle but pervasive, and stems largely from unconscious ways of thinking that have been socialized into all of us, men and women alike. This makes the situation better than in previous decades where blatant inequities and sexual assault and intimidation were endured but not spoken of. We can all be thankful for that. But the consequences of these more subtle forms of discrimination are equally real and equally demoralizing.

The women who worked on these issues over the past five years are all gifted scientists, themselves convinced that gender had nothing to do with their careers: if they succeeded it was on the basis of their competence, and recognition would certainly follow; if they didn't it was based on something they lacked and rewards weren't warranted. During their earlier years, this belief was continuously reinforced, but then something seemed to change. It was only when they came together, and with persistence and ingenuity, that they saw that as their careers advanced something else besides competence came into play, which for them meant an accumulation of slight disadvantages, with just the opposite for their male colleagues. Their ability to identify the inequities that resulted and the Dean's willingness to respond, have changed the environment for their work and enhanced their ability to contribute productively to the institution.

In order to keep the momentum of this effort, and to extend it to other parts of the Institute, we need to implement Institute-wide means of continuously tracking progress and to find ways to keep senior faculty women involved in the process. This is hard work. Our first instinct is to deny that a problem exists (if it existed, it would surely have been solved by now), or to blame it on the pipeline or the circumstances and choices of individual women. None of these, however, explains the inequities surfaced by the Committee. To ensure an equitable faculty environment, we need committees such as these (including also, as in the present case, male faculty with administrative experience) in all Schools of the Institute. Their task is not only to track and monitor, but also to keep under-represented faculty closely tied to the administrators who make the Institute's critical decisions. As both President Vest and Dean Birgeneau emphasize in their comments, we have made progress, but there is still a long way to go.✣

The key conclusion that one gets from the report is that gender discrimination in the 1990s is subtle but pervasive, and stems largely from unconscious ways of thinking that have been socialized into all of us, men and women alike.

[Lotte Bailyn can be reached at lbailyn@mit.edu]

Abstract

In 1995 the Dean of Science established a Committee to analyze the status of women faculty in the six departments in the School of Science. The Committee submitted a report of its findings in August, 1996 and amended reports in 1997 and 1998. The Committee discovered that junior women faculty feel well supported within their departments and most do not believe that gender bias will impact their careers. Junior women faculty believe, however, that family-work conflicts may impact their careers differently from those of their male colleagues. In contrast to junior women, many tenured women faculty feel marginalized and excluded from a significant role in their departments. Marginalization increases as women progress through their careers at MIT. Examination of data revealed that marginalization was often accompanied by differences in salary, space, awards, resources, and response to outside offers between men and women faculty with women receiving less despite professional accomplishments equal to those of their male colleagues. An important finding was that this pattern repeats itself in successive generations of women faculty. The Committee found that, as of 1994, the percent of women faculty in the School of Science (8%) had not changed significantly for at least 10 and probably 20 years. The Committee made recommendations for improving the status of senior women faculty, addressing the family-work conflict for junior women faculty, and increasing the number of women faculty. The Dean of Science took immediate actions to effect change and these have already resulted in highly significant progress including an increase in the number of women faculty. *This collaboration of faculty and administration could serve as a model for increasing the participation of women, and also of under-represented minorities, on the faculty of other Schools at MIT.* This is an important initiative since, even with continued effort of this magnitude, the inclusion of substantial numbers of women on the Science and Engineering faculties of MIT will probably not occur during the professional lives of our current undergraduate students. The inclusion of significant numbers of minority faculty will lag for even longer because of the additional problem of a shortage of minority students in the pipeline.

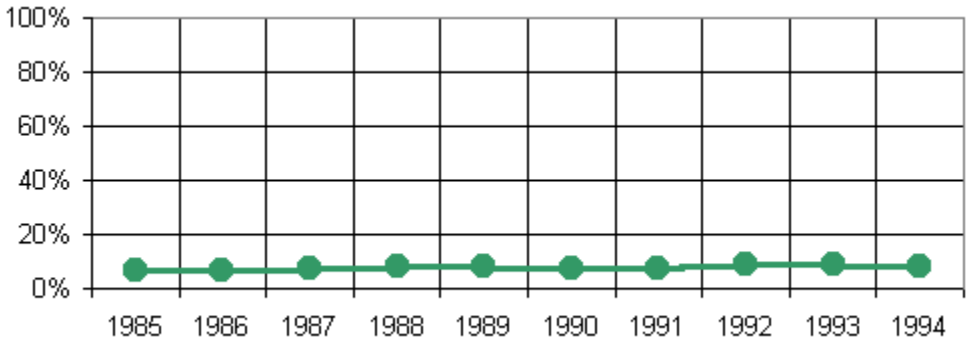
Introduction

In the summer of 1994, three tenured women faculty in the School of Science began to discuss the quality of their professional lives at MIT. In the course of their careers these women had come to realize that gender had probably caused their professional lives to differ significantly from those of their male colleagues. Interestingly, they had never discussed the issue with one another and they were even uncertain as to whether their experiences were unique, their perceptions accurate. This situation was about to change dramatically. It was soon clear to the women that their experiences formed a pattern. Curious to know whether other women in the School of Science shared these experiences, they drew up a list of all the tenured women faculty in the School of Science in order to conduct an informal poll.

The three women faculty were surprised to discover how easy the polling would be. This was because in the summer of 1994, there were only 15 tenured women faculty in the six departments of the School of Science, vs 194 men. These numbers had remained essentially unchanged for 10-20 years. In a formal study conducted the following year, the graph and table shown below were obtained from the Planning Office at MIT. The data show the numbers of men and women faculty in Science for each year in the decade from 1985-1994.

Figure 1 and Table 1

% Women Faculty in the School of Science at MIT - 1985-1994



Gender	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Female	18	18	21	24	23	22	22	24	24	22
Male	257	255	273	272	265	267	261	253	253	252
Grand Total	**275**	**273**	**294**	**296**	**288**	**289**	**283**	**277**	**277**	**274**
%Male	93.5%	93.4%	92.9%	91.9%	92.0%	92.4%	92.2%	91.3%	91.3%	92.0

With a list of tenured faculty in hand, the three women set out to poll the 12 other tenured women faculty in Science, plus 2 women faculty with primary appointments in the School of Engineering and secondary appointments in Science, to determine if these women would join in a discussion of the status of senior women faculty. They were warmly received. Recognition that there was a problem and an understanding of what the problem was proved to be instantaneous with almost all the women they spoke with. Within a day, the tenured women faculty in Science comprised a group with a common purpose.

Discussions with women faculty from the other Schools at MIT soon revealed that the gender-based experiences that had negatively impacted the professional lives of women faculty in Science were not unique to that School. The problems were universal regardless of School or academic discipline. Rather than form an MIT-wide group to study the problem, however, because of the very different cultures and needs of different disciplines and Schools, the women realized that solutions were most likely to be found if the problem was addressed within a single School. Since the women who first became interested in the issue were from Science, the initiative took shape in that School.

Establishing a Committee on Women Faculty in the School of Science

In August, 1994, 16 of the 17 the tenured women faculty in Science sent a proposal to Bob Birgeneau for an initiative to improve the status of women faculty in the School of Science. They wrote as follows:

"This proposal has been developed by the tenured women faculty in the School of Science. It speaks to our serious concerns about the small number of women professors at MIT, and about the status and treatment of the women who are here. We believe that unequal treatment of women faculty impairs their ability to perform as educators, leaders in research, and models for women students...

We believe that discriminatory attitudes operate at the time of hiring junior faculty and influence the experiences of the women who are hired. Most discrimination at MIT, whether practiced by men or women, is largely unconscious. Often it is difficult to establish discrimination as a factor because any one case, no matter how disturbing or aberrant, can usually be ascribed to its special circumstances... Thus, we need to develop safeguards to prevent, detect, and promptly correct the experiences that together constitute gender discrimination...

We believe that unequal treatment of women who come to MIT makes it more difficult for them to succeed, causes them to be accorded less recognition when they do, and contributes so substantially to a poor quality of life that these women can actually become negative role models for younger women...

The heart of the problem is that equal talent and accomplishment are viewed as unequal when seen through the eyes of prejudice... There is a perception among many women faculty that there may be gender related inequalities in distribution of space and other resources, salaries, and distribution of awards and other forms of recognition. Currently, a glass ceiling exists within many departments...

We request that a committee be established... to deal with the status of women faculty in the School of Science... The role of the Committee would be to review space, resource distribution, salaries, and teaching assignments for women faculty to guarantee that they are fair relative to those of their male colleagues. When inequities are detected, there should be a mechanism to initiate prompt action to correct these inequities."

It is important to realize how difficult this effort was for the senior women faculty at that time. Driven all their professional lives to achieve at the highest possible level, to many it seemed they were putting a life-time of hard work and good behavior at risk. They feared being seen as radical trouble makers, as complainers. But the feeling of an injustice, the anger that accumulates from this recognition, and the strong desire to change things for themselves and for future generations of women, propelled them forward.

In response to their request, the Dean undertook a quick study of his own and immediately recognized that a serious problem existed. He became a strong champion of the women's cause. Some administrators resisted the notion that there was any problem that arose from gender bias in the treatment of women faculty. Some argued that it was the masculine culture of MIT that was to blame and little could be done to change that. With the support of President Vest, the Dean won the approval of the department Heads in Science to allow the women faculty to establish their Committee as requested. A pre-committee that included department Heads was appointed to write a charge to the Committee to ensure that the terms would be acceptable to all.

Committee membership and how the Committee operated

The Committee was composed of a single tenured woman from each of the six departments in Science (except Mathematics since there were and still are no tenured women faculty in math) plus three senior male faculty. The three men were or had been department Heads. This was important as their knowledge and administrative experience proved to be invaluable to the work of the Committee.

To analyze the status and equitable treatment of women faculty the Committee collected two types of information - data and interviews with women faculty and department heads.

Data

Data were collected pertaining to the allocation of resources that impact the professional success of faculty, compensations and awards that reflect the administration's valuation of faculty, and obligations that impact the professional quality of life of faculty. Although the Committee was not initially charged with addressing the question of the very small number of women faculty, the issue is so important that it could not be ignored so pipeline data were also studied. Thus, data for men vs women faculty were studied concerning salary, space, resources for research, named chairs, prizes, awards, amount of salary paid from individual grants, teaching obligations and assignments, committee assignments - departmental, Institute, outside professional activities and committees, and pipeline data: numbers of women/men students and faculty over time. Most data were obtained from the Dean's office, some from the planning office at MIT.

Interviews with women faculty and department heads

All but one senior woman faculty in the School of Science either served on the Committee or was interviewed by the Committee. All department Heads in the School of Science either served on the Committee or were interviewed by the Committee. A difficult decision was whether to interview junior women faculty as the Committee did not wish to place them in a possibly awkward position. In the end interviews were conducted with most of the junior women faculty since these women considered the initiative important and wished to contribute.

A particularly important aspect of how the Committee operated was that no substantive letter, memo, or report was written, and no important action taken without seeking the participation and advice of all the tenured women faculty in Science. As discussed below, exclusion and invisibility proved to be the common experience of most tenured women faculty. The Committee's purpose was to be the voice and opinion of all the senior women faculty. A great value of the Committee also lay in sharing the data collected with all the tenured women faculty, since most women had been excluded from this type of information throughout their careers, often with negative consequences for their professional lives.

What the Committee learned

From data

Given the tiny number of women faculty in any department one might ask if it is possible to obtain significant data to support a claim of gender differences in terms of the distribution of resources and rewards to men vs women faculty. The answer to this question is unequivocally yes. The key to a meaningful review is twofold:

1) It is essential to review primary rather than processed data, and

2) It is essential that the review be done by senior women faculty who are deeply knowledgeable about the particular department, discipline and area of research.

Data reviews revealed that in some departments men and women faculty appeared to share equally in material resources and rewards, in others they did not. Inequitable distributions were found involving space, amount of 9-month salary paid from individual research grants, teaching assignments, awards and distinctions, inclusion on important committees and assignments within the department. While primary salary data are confidential and were not provided to the committee,

serious underpayment of senior women faculty in one department had already been discovered and corrected two years before the Committee formed. Further possible inequities in salary were flagged by the Committee from the limited data made available to it.

The Committee sought data to try to determine whether the number of women faculty was increasing. The data, shown in Table 2 and Figure 2 for the six departments in the School of Science, reveal that there are very significant numbers of women students in the sciences at MIT, but, as has been found in studies of many academic institutions, the pipeline leaks at every stage of career. It was apparent that overall the percent of women faculty had not changed for at least 10, and probably 20, years and there was no indication that there would be any change in the foreseeable future.

Table 2

Number of women (F) vs. men (M) – undergraduate to faculty in the School of Science, MIT 1994*

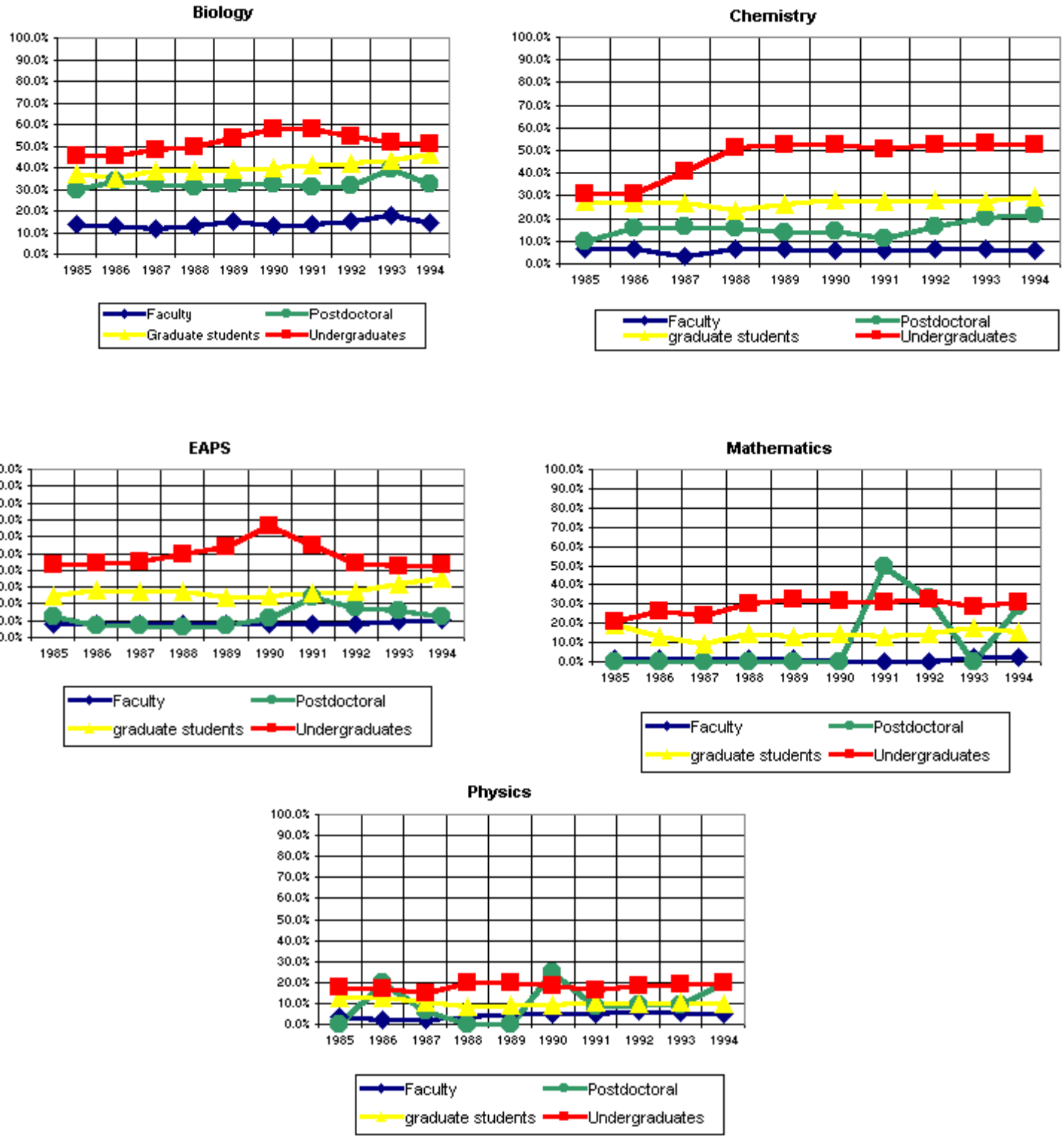
	Biology		Chemistry		EAPS	
	F	M	F	M	F	M
Undergraduates	147	142	59	53	7	9
Grad. Students	101	118	73	176	67	121
Postdocs**	27	57	20	71	3	21
Faculty	7	42	2	30	4	35

	Brain & Cog.		Mathematics		Physics	
	F	M	F	M	F	M
Undergraduates	28	23	53	123	40	160
Grad. Students	17	36	17	95	30	267
Faculty	4	19	1	47	4	77

*Data taken from tables provided by Lydia Snover, Planning Office, MIT
**This category not included for three other departments.

Figure 2

Percent Women at Each Stage of Career in Five Departments in the School of Science at MIT in the Period 1985-1994



* Data not shown for Department of Brain and Cognitive Sciences which was formed during this period. But see data in Table 2 for BCS for 1994.

From interviews

The Committee documented women faculty's perceptions about their status and that of their female colleagues. These interviews were invaluable and provided a compelling picture of the lives of women faculty in the School of Science at MIT and the necessity for change. While there was variation between departments, a common finding for most senior women faculty was that the women were "invisible", excluded from a voice in their departments and from positions of any real power. This "marginalization" had occurred as the women progressed through their careers at MIT, making their jobs increasingly difficult and less satisfying. In contrast, junior women faculty felt included and supported in their departments. Their most common concern was the extraordinary difficulty of combining family and work.

An important finding to emerge from the interviews was that the difference in the perception of junior and senior women faculty about the impact of gender on their careers is a difference that repeats itself over generations. Each generation of young women, including those who are currently senior faculty, began by believing that gender discrimination was "solved" in the previous generation and would not touch them. Gradually however, their eyes were opened to the realization that the playing field is not level after all, and that they had paid a high price both personally and professionally as a result.

Interviews with department Heads were invaluable for providing insight into some of the reasons for the isolation of senior women faculty as well as for the difficulty in hiring women faculty. The Committee's findings were summarized in their report as shown on an accompanying page.

What the Committee recommended

To address the problems it had documented, the Committee and the tenured women faculty in Science made a set of proposals to the administration for achieving equity and improving the status of senior women faculty, for improving the quality of the professional lives of junior faculty and for preventing the possible future marginalization of junior women faculty, and for increasing the number of women faculty. These recommendations were summarized in the Committee's report as shown on an accompanying page.

Real progress: What the Dean did to improve the status and equitable treatment of senior women faculty and to increase the number of women faculty in Science

Upon receiving an interim report from the Committee in the summer of 1995, the Dean took immediate steps to redress inequities to senior women faculty. Individual issues of space, resources, equipment, previous underpayment of pensions, and responses to outside offers were rapidly addressed. Through discussions with department Heads, the inclusion of women in significant departmental activities was increased. Working with department Heads the Dean also made great effort to identify and recruit exceptional women at all faculty ranks. It is impossible to state too strongly how important these actions have been for improving the morale and the professional and personal lives of many senior women faculty and for increasing the number of women faculty.

One senior woman faculty described the outcome of this collaboration as *"more progress for women faculty at MIT in one year than was accomplished in the previous decade."*

Another woman, describing the change in her professional life, noted, *"I was unhappy at MIT for more than a decade. I thought it was the price you paid if you wanted to be a scientist at an elite academic institution. After the Committee formed and the Dean responded, my life began to change. My research blossomed, my funding tripled. Now I love every aspect of my job. It is hard to understand how I survived those years - or why."*

Also impressive is the change in the percent of women faculty as a result of these efforts. As shown in Table 3 below, the percent of women faculty in Science exceeds 10% in 1999, a first for MIT. This year alone there will be a remarkable 40% increase in the percent of tenured women faculty in the School of Science.

Table 3

Number of Men and Women Faculty in Science at MIT in 1994 and 1999

	1994	**1999**
Men	252	235
Women	22	31

The events described above raise two important questions: 1) How did this problem come about in the first place? and 2) Given the striking success of the collaboration between the women faculty and Dean Birgeneau is the problem solved now?

How did inequities come about? "Gender discrimination" in 1999

Given the tiny number of women faculty and the fact that they are essentially irreplaceable, one would have assumed that all tenured women would be treated exceptionally well-pampered, overpaid, indulged. Instead, they proved to be underpaid, to have unequal access to the resources of MIT, to be excluded from any substantive power within the University. How did this surprising state of affairs come about?

First and foremost it is essential to set aside the issue of whether these women were badly treated because they were simply not good enough. It must be understood that for these particular women the opposite was undeniably true. Despite discrimination, most of these women achieved at an outstanding level within their professions. Forty percent of the tenured women faculty are members of the National Academy of Sciences and/or the American Academy of Arts and Sciences. Only people above the average MIT faculty could have succeeded at this level despite the many obstacles the senior women faculty encountered in their careers. Indeed, it should be almost obvious that the first women, the first blacks, the pioneers who break through despite enormous barriers must be exceptional. Once and for all we must recognize that the heart and soul of discrimination, the last refuge of the bigot, is to say that those who are discriminated against deserve it because they are less good. While the term "affirmative action" is sometimes used to mean letting people in simply because they are women, minorities, that is the opposite of what affirmative action means at MIT and most emphatically, to women faculty at MIT. The tenured women faculty in Science are interested only in equity for women who are at least as good as their male colleagues, and, as the Committee learned, women are often the harshest critics of other women they deem less than better than most faculty for fear that they will reflect badly on all women.

How else might we explain what happened to the senior women faculty in Science? While the reasons for discrimination are complex, a critical part of the explanation lies in our collective ignorance. We must accept that what happened to the tenured women faculty in the School of Science **is** what discrimination is. It defines discrimination in the period from the 1970s up till today. But we, including for a long time the women faculty themselves, were slow to recognize and understand this for several reasons. First, *it did not look like what we thought discrimination looked like.* Most of us thought that the Civil Rights laws and Affirmative Action had solved gender "discrimination". But gender discrimination turns out to take many forms and many of these are not simple to recognize. Women faculty who lived the experience came to see the pattern of difference in how their male and female colleagues were treated and gradually they realized that this was discrimination. But when they spoke up, no one heard them, believing that each problem could be explained alternatively by its "special circumstances". Only when the women came together and shared their knowledge, only when the data were looked at through this knowledge and across departments, were the patterns irrefutable.

The tenured women faculty, acting as a group through the Committee, together with the Dean, made a discovery. They identified the forms that gender "discrimination" takes in this post-Civil-Rights era. They found that discrimination consists of a pattern of powerful but unrecognized assumptions and attitudes that work systematically against women faculty even in the light of obvious good will. Like many discoveries, at first it is startling and unexpected. Once you "get it", it seems almost obvious.

Do other elite Universities "get it" better than MIT? No, and indeed, a common defense for MITs small number of women faculty is that "Cal Tech and Harvard are doing just as badly". But to be as bad as these unenlightened institutions is not a defense we should take! Given its particular strengths in fact-finding and problem-solving, MIT should lead in this area, not settle for the unimpressive record of the more traditional institutions.

Long term solutions - "Affirmative actions " for 1999: Ensuring equity for women faculty in all Schools at MIT, improving the quality of life for junior faculty at MIT, and expanding this initiative, and others as well, to increase the number of minority faculty at MIT

Now that we have a better understanding of gender discrimination, and now that many specific issues have been fixed for our current senior women faculty in Science, can we go back to business as usual and expect that the problem has gone away? Clearly not. The number of women faculty in Science is still tiny (the percent of faculty who are women is even smaller in Engineering) and the number of administrators who have participated in this effort and understand it is even smaller. The success of this initiative was the result of the unusual dedication and effort of a tiny group of faculty and a single administrator, Dean Birgeneau. But progress that depends on a small number of specific individuals is unlikely to be maintained. Unless actions are taken to install mechanisms to prevent gender discrimination, we can be certain that it will recur in the near future. Furthermore, despite the increase in the number of women faculty as a result of five years of effort by Dean Birgeneau and many department Heads in Science, the proportion of faculty who are women will remain small for decades to come. Even if we continue to hire women at the current increased rate in Science, it will be 40 years before 40% of the faculty in the School of Science could be women! Finally, we must address the issue of family and work for our junior faculty since MITs current faculty system is built around a one-career family, while many of our junior faculty today are part of a two-career family structure.

To solidify the gains we have made, we need to implement the recommendations of the Committee on Women Faculty as soon as possible and we can extend this effort to other Schools at MIT. Critically important are 1) to establish a continuing review of primary data to ensure that inequities do not occur and 2) to establish close communication between the senior women faculty and department Heads, Deans, and the higher administration both to prevent marginalization of women faculty and so that senior women faculty's unique knowledge of gender issues becomes integrated at the level where academic power resides. The latter will remain critically important until women faculty routinely occupy positions of academic power. We must remember that, as of 1999, there has never been a woman department Head, associate Head, or center director in the School of Science in the history of MIT.

It also seems imperative, now that we better understand the unexpected forms that discrimination can take and better understand how to address them by a collaboration of faculty and administrators, that we should take steps to make greater progress in addressing the serious under-representation of minority faculty at MIT. Few issues are as important for a University as the inclusion of women and minorities at the faculty level. To remain at the top academically we must seek out and nurture the best talent available, and half of that is female, much of it in under-represented minorities. We have a great opportunity now to take advantage of the tiny number of women and minorities that we have finally accumulated in the past 25 years, and to use their knowledge of these problems to help ensure MIT's excellence and competitiveness into the future.

SUMMARY FROM THE FIRST REPORT OF THE COMMITTEE ON WOMEN FACULTY IN THE SCHOOL OF SCIENCE – 1996

The Committee reviewed the status and equitable treatment of women faculty in the School of Science and addressed the related question of why there are still so few women faculty. We used interviews with women faculty and Department Heads to obtain information about both tenured and untenured women faculty, and, in the case of tenured women faculty, we collected data pertaining to salary, amount of salary paid from grants, space, resources, teaching assignments, and outside professional activities for women vs men. We also obtained pipeline data on the number of men and women students, postdocs, and faculty in the School of Science at MIT to determine whether the number of women shows any signs of increasing.

The Committee learned that untenured women faculty feel that men and women faculty are treated equally in terms of resources, salary, and other material benefits. Most feel supported by their departments in their scientific endeavors, and feel included in departmental activities and in the types of intellectual networking needed to succeed in science. While the Committee did not collect equity data, nothing we learned contradicted the accuracy of this perception, and information obtained from interviews with department Heads supported it. While some junior women faculty experience what they suspect may be gender bias in their own treatment or in that of other women faculty, almost none believe that gender bias will impede their careers. Junior women faculty who have children believe, however, that the demands of family are a potential obstacle to success that may impact their careers differently from those of their male colleagues. The Committee believes that institutional changes could help to alleviate this inequality.

After tenure, many senior women faculty begin to feel marginalized, including those who felt well supported as junior faculty. They sense that they and their male colleagues may not be treated equally after all. Incidents in their own professional lives or differential treatment of their male and female colleagues may open their eyes to this reality. The Committee obtained strong evidence to support their perception, although considerable variation in departments was found. One department has no tenured women faculty, one had only one at the time of this analysis and she had not experienced difficulties, while a third department has several tenured women who feel involved and represented, although they have seen or experienced problems of marginalization and exclusion of women faculty from time to time in the past. Within three departments the Committee obtained evidence of subtle differences in the treatment of men and women faculty, evidence of exclusion, and, in some cases, evidence of apparent discrimination against women faculty. The Committee documented differences in salary in the recent past, in amount of 9-month salary paid from grants, in access to

space, resources, and inclusion in positions of power and administrative responsibility within departments or within the broader MIT community. Differences resulted in women having less or in their being excluded from important professional opportunities. Interviews with women faculty revealed the tremendous toll that exclusion and marginalization take on their professional and personal lives. Problems appear to increase progressively as women approach the same age as their administrators. The Committee believes that problems flourish in departments where non-democratic practices, including administrative procedures whose basis is known only to a few, lead inevitably to cronyism and unequal access to the substantial resources of MIT.

The Committee learned that the percent of women faculty in the School of Science has not increased for at least a decade. As of 1994 there were 22 women faculty, 252 male faculty.

After the Committee submitted an Interim Report on its findings, the administration moved swiftly to improve the status and equitable treatment of senior women faculty and to increase the number of women faculty. These efforts have already significantly improved the professional lives and morale of many of the tenured women faculty. While considerable effort will be needed to sustain progress, success to date demonstrates that a collaboration between committed faculty and administrators can help to solve the long standing problem of integrating significant numbers of women into the faculty of MIT. Based on suggestions from the women faculty, the Committee prepared a set of recommendations to further improve the status and equitable treatment of women faculty.

RECOMMENDATIONS MADE TO THE MIT ADMINISTRATION IN THE FIRST REPORT OF THE COMMITTEE ON WOMEN FACULTY IN THE SCHOOL OF SCIENCE - 1996

To Improve the Status of, and Ensure Equity for, Senior Women Faculty

- Make the Committee on Women Faculty a standing committee. The Committee should:
  - Maintain and open channels of communication between Department Heads and women faculty
  - Collect equity data each year for inclusion in a written report, and disseminate a summary of the report to the MIT community
  - Raise community consciousness about the need for equity

- Seek out women for influential positions within Department and Institute administrations, including as Heads and as members and Chairs of key committees. Involve tenured women faculty in the selection of administrators, and consult with women faculty to ensure the continued commitment of administrators to women faculty issues.

- Review the compensation system, which has been shown to impact differentially on salaries of men and women faculty in recent years. In particular, review the reliance on outside offers. Review salary data and distribution of resources annually for gender equity.

- Replace administrators who knowingly practice or permit discriminatory practices against women faculty. Promptly end inequitable treatment of women faculty, and make appropriate corrections for inequities when they are discovered.

- Watch for, and intervene to prevent, the isolation and gradual marginalization of women faculty that frequently occurs, particularly after tenure.

To Improve the Professional Lives of Junior Women Faculty

- Take proactive steps, via department Heads and via the Committee on Women Faculty, to promote integration, and to prevent isolation of junior women faculty.
- Address the childbearing issue for junior women faculty:
  - Make the policy on maternity leave and tenure clock uniform throughout the Institute, and make the policies widely known so that they become routine
  - Take steps to change the presumption that women who have children cannot achieve equally with men or with women who do not have children

To Increase the Number of Women Faculty

- Advise Department Heads to place senior women faculty on appropriate search committees.
- When hiring faculty do not overlook women candidates from within MIT, particularly in the fields of Mathematics and Chemistry where the number of women candidates is small.
- Inform Department Heads each year that conscious effort is needed to identify and recruit outstanding junior and senior women faculty from outside MIT.
- Address the family-work conflict realistically and openly, relying on advice from appropriate women faculty, in order to make MIT more attractive to a larger pool of junior women faculty, and to encourage more women students and postdocs to continue in academic science.