QUALITY OF LIFE SURVEY

Findings of the FACULTY SURVEY Conducted in October 2001

Report of the Council on Family and Work
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Massachusetts
Institute of
Technology

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INTRODUCTION

The Quality of Life Survey was announced to the MIT community by MIT President Charles M. Vest in October 2001. In his email, Dr. Vest said, "Two years ago, I reestablished the MIT Council on Family and Work and requested advice on how to make MIT a better place to work and study. Our goal is to provide an environment that promotes personal and professional growth for everyone. The devastating events of Sept. 11 have made us even more determined to strengthen our sense of community, and I am committed to this.… This survey will give us an understanding of the factors affecting the well-being of faculty and staff and will help the Council to formulate its recommendations.… Your responses will help make MIT a better place to work."

The survey's purpose was to investigate the factors that contribute to quality of life for faculty and staff at MIT, and the implications for the future of MIT. Quality of life is defined as the ability to integrate a fulfilling and productive work life with a fulfilling personal and/or family life. During the spring and summer of 2001, the survey instrument was developed, with different versions for faculty, campus staff, and Lincoln Laboratory staff. All faculty and staff working half-time or more were invited to participate in the survey, which was conducted during October and November 2001. Completed surveys were received from 33% of the faculty, 30% of the campus staff, and 40% of the Lincoln Laboratory staff. The data were analyzed by an external contractor, WFD Consulting, Inc., and the results were reported to CFW in a summarized form so that the confidentiality of all respondents was preserved. Survey methods, response rates, and analysis are discussed in *Appendix A: Response Rates and Methodology*.

This report contains a summary and analysis of the results of the Faculty Quality of Life Survey, as well as the recommendations formulated by the Council on Family and Work after considering the findings.

Faculty Survey Results

Only one-third of the faculty are satisfied with the pace and pressure at MIT, and nearly two-thirds believe that the pace and pressure at MIT are greater than at other

leading research institutions. Hours of work have increased over the last decade: in 1989, less than half of the faculty reported working sixty hours or more in an average week, while today, about two-thirds of faculty report they do. Moreover, there is both a gender gap and a generation gap in faculty members' perceptions of pace and pressure: women and younger male faculty disproportionately report suffering the effects of an intense work environment.

Recommendations for Faculty

The Council on Family and Work recommends that a Provost-appointed Committee explore new approaches to solving these problems—some of which are deeply rooted in MIT culture—and carefully formulate a set of recommendations to senior administrators. As appropriate, the Committee may solicit further feedback from the faculty and coordinate its efforts with the Council on Faculty Diversity's subcommittee on Quality of Life. The Council also recommends a new communication initiative to inform faculty and departmental leaders about the revised family support policies which are not as widely known or appreciated by MIT faculty members as they should be. This initiative should be coordinated with the activities of the new Family Policies Oversight Committee, chaired by Prof. Sam Allen.

Both the faculty and the staff surveys revealed that dependent care is a salient issue at MIT. The concerns of both groups, which were quite similar, are summarized in *Appendix B: Dependent Care for Faculty and Staff*, along with pertinent recommendations. Finally, *Appendix C: Sample of Faculty Suggestions*, lists constructive suggestions from individual faculty members that warrant further scrutiny.

Relevance of Staff Survey

It is important to note that the Council also gave significant attention to the staff survey, and its findings are directly relevant to the faculty. An effective and high-performing staff is essential to faculty productivity and well-being. Some particularly important issues that the staff reported in the survey are high levels of stress and burnout among campus administrative staff members, especially those who work directly with faculty, and the importance of flexible work arrangements to a significant number of staff members. The complete report on the staff survey and findings is available separately.

Following are the key findings from the Faculty Quality of Life Survey, organized into four major categories: *Pace and Pressure*, *Inclusion and Diversity*, *Family Status*, and *The MIT Environment*. The faculty's perceived needs are summarized in *What are Faculty Asking For?*; a section containing *Proposals for Faculty* completes the report.

Pace and Pressure

Fewer than half (46%) of all women faculty and non-tenured men are satisfied[1] with their overall quality of life, but two-thirds of tenured men are satisfied (*Table 1*). Quality of life is defined as the ability to integrate a fulfilling and productive work life with a fulfilling personal and/or family life.

TABLE 1: Satisfaction with Ability to Integrate Work Life with Personal and/or Family Life

	Tenured Men	Tenured Women	Non-Tenured Men	Non-Tenured Women
Very Dissatisfied Dissatisfied	18%	41%	35%	31%
Neither Satisfied nor Dissatisfied	15%	12%	18%	23%
Satisfied Very Satisfied	67%	45%	46%	46%

Faculty are working longer hours than a decade ago. Comparing this study to the findings in the 1989 Assessment,[4] hours of work have increased dramatically. Nearly two-thirds of faculty now report working sixty or more hours in an average week, compared to 48% a decade ago.

There are differences of opinion about whether the pace fuels excellence, but many find the pace oppressive. **Some 36% of faculty are dissatisfied with the**

1. In the text, the word "satisfied" represents the aggregation of respondents who described themselves as "satisfied" or "very satisfied"; similarly for "dissatisfied." This shorthand is used throughout the text; in the tables that support the text, the groupings are clearly indicated.

pace and pressure at the Institute, rising to 41% of faculty with children under the age of 23.

Pressure and time demands differ among the schools. School of Science faculty are more satisfied with the Institute's pace and pressure than those in other schools (49% vs. 38% overall); see *Table 2* for perceptions of pace and pressure by school. They are also less likely to report health effects of work/life demands (23% vs. 37% overall). Nearly three-quarters of Engineering faculty and two-thirds of Sloan faculty report that their job requires too much time, compared to 46% for Science and HASS (Humanities, Arts, and Social Sciences).

TABLE 2: Pace and Pressure by School[a]

	Engineering	HASS	Sloan	Science	ALL
Very Satisfied	8%	14%	3%	6%	**7%**
Satisfied	27%	28%	21%	43%	**31%**
Neither Satisfied nor Dissatisfied	21%	22%	33%	33%	**25%**
Dissatisfied	35%	28%	25%	14%	**27%**
Very Dissatisfied	9%	8%	17%	4%	**9%**

a. There were too few respondents from the School of Architecture and Planning to permit analysis.

Nearly two-thirds (62%) of faculty believe that the pace/pressure at MIT is greater than at other leading research institutions.

There is both a gender gap and a generation gap in faculty members' perceptions of pace and pressure. Women and younger male faculty disproportionately report suffering the effects of an intense work environment. For example:

- Nearly two-thirds of women (63%) report that the influence of the pace/pressure at MIT on their sense of well-being is negative.
- Non-tenured men (57%) and under-45 tenured men (56%) are more likely than 45-and-over tenured male faculty (38%) to report a negative influence of pace/pressure on their sense of well-being.
- 91% of tenured women feel that, no matter how hard they work, they cannot accomplish everything they need to, compared to 77% of tenured men.

- 54% of tenured women report too much of a service/committee load, compared to 40% of tenured men.

WFD Consulting has developed a proprietary Stress and Burnout Index as a metric for the difficulty of meeting one's professional and personal obligations. Using this metric, WFD (our external contractor) concludes that "older tenured men exhibit lower stress and burnout than other faculty." The numbers in *Table 3* provide a relative indication of the stress and burnout of various faculty groups.

TABLE 3: Relative Stress and Burnout Levels

	Men	Women	Total
Tenured	4.5	6.0	4.7
Non-tenured	5.6	6.2	5.7
Total	4.7	6.1	

Pace, pressure, and stress negatively affect faculty in the following areas:

- Personal/family life (62%)
- Relationship with colleagues (48%)
- Health (37%)
- Teaching and advising (37% and 44% respectively)
- Quality of work (31% say they are unable to do their best at work due to stress of personal/family responsibilities)
- Research (27%)

Teaching and advising loads vary by school, but the advising load is considered "about right" by three-quarters of faculty. Ninety percent of Science faculty consider the advising load "about right" while 25% of Engineering faculty say it is "too much." Five out of six (84%) faculty report that their teaching load is "about right."

Of non-tenured faculty, more than half (53%) report that stress is affecting their health.

Non-tenured faculty are more likely than tenured faculty (74% vs. 58%) to report that MIT's pace and pressure have a negative influence on their personal/family life.

Some 42% of faculty report too few resources for research (space, materials, staff). Of Engineering faculty, 54% cite too few resources for research.

Some 62% of faculty feel physically or emotionally drained at the end of the day. In addition, 78% of faculty report that, no matter how hard they work, they can't get everything done. By comparison, the benchmark figures for these parameters in WFD's database of corporate executives are 55% who feel drained at the end of the day, and 48% who say they can't get everything done.

Inclusion and Diversity

As noted in *Appendix A: Response Rates and Methodology*, there were too few minority respondents to permit analysis of racial and ethnic subpopulations. The diversity analyses in this section are focused on gender diversity only.

Overall, faculty report feeling comfortable, valued, and included as members of their department, although non-tenured (56%) are less likely than tenured (71%) faculty to feel included in their department. In contrast, faculty are less likely to feel included as members of their school or of the Institute. HASS faculty are more likely than those in other schools to say they feel isolated/marginal (48% vs. 29% overall) with respect to the Institute. Sloan faculty are less likely to feel that they are given opportunities to serve on important departmental committees (42% vs. 64% overall).

Relative to their male peers, tenured women faculty feel marginalized. For example, among tenured women:

- 44% feel valued for their teaching contributions (compared to 66% of tenured men)
- 35% strongly agree that they are respected by students (compared to 44% of tenured men)

- 24% have very seriously considered leaving MIT in the last twelve months (compared to 15% of tenured men)
- More than half (51%) of tenured women indicate they serve on important departmental committees, yet a comparable proportion (47%) still feel they do not influence key department decisions (perhaps indicating that the committees' decision-making processes are not transparent and therefore marginalize their women members)

Table 4 provides a summary of key differences between faculty men and women by tenure status.

TABLE 4: Faculty Responses to Key Questions[a]

		Tenured Women	Tenured Men	Non-Tenured Women[b]	Non-Tenured Men
Quality of Life	• Dissatisfied with overall quality of life	41%	18%	31%	35%
	• Cannot accomplish everything they need to, no matter how hard they work	91%	77%	77%	81%
	• Pace and pressure negatively affect well-being	64%	42%	62%	57%
Inclusion	• Feel uncomfortable, marginal or isolated in their department	26%	16%	8%	26%
	• Feel uncomfortable, marginal or isolated in the Institute	37%	22%	42%	45%
	• Feel valued for their teaching contributions	44%	66%	69%	49%
	• Strongly agree that they are respected by students	35%	44%	15%	42%
	• Hold an MIT degree	17%	47%	31%	31%
Ability to Exert Influence	• Strongly agree that they have opportunity to serve on important departmental committees…	51%	27%	8%	10%
	• …yet strongly agree they would value more opportunity to influence key department decisions	47%	27%	23%	13%
	• Have too much committee responsibility	54%	40%	9%	29%
Retention	• Have very seriously considered leaving MIT in the last twelve months	24%	15%	15%	27%
	• Some of the above are nearing retirement (age 55 or older)	33%	50%	n.a.	n.a.

a. Percent of population who, unless noted otherwise, agree or strongly agree with the statement
b. Note that the percentages in this column are derived from 13 respondents; see Appendix A: Response Rates and Methodology, Table 10

Family Status

More than one-third (38%) of tenured male faculty have a spouse/partner who is not employed, compared to 4% of tenured women. Some 64% of tenured men have a spouse/partner who is at home at least part-time, compared to 10% of tenured women. Among tenured faculty, 65% of women are in dual-career families, compared with 29% of men (see *Table 5*). Non-tenured women are either married/partnered with someone who works full-time or they are single; none have partners who are at home some or all of the time.

TABLE 5: Family Status of Faculty

Family Status	Tenured Women	Tenured Men	Non-Tenured Women[a]	Non-Tenured Men
• Single	25%	7%	38%	17%
• Dual-career household (spouse/partner works full-time)	65%	29%	62%	40%
• Spouse/partner does not work at all or works part-time	10%	64%	0%	45%

a. Note that the percentages in this column are derived from 13 respondents; see Appendix A: Response Rates and Methodology, Table 10

Four out of five non-tenured faculty have a spouse or partner; among them, sixteen percent live in a different community than their spouse/partner for work reasons.

Spouses/partners of non-tenured faculty are more likely to work 60 hours or more per week than the spouses/partners of tenured faculty (26% vs. 16%). Women are more likely than men to have a spouse/partner who works more than 60 hours per week (37% vs. 16%).

The work commitments of spouses/partners have not changed greatly since 1989. At that time, 39% of women and 10% of men who were married/partnered reported that their spouse/partner worked 60 hours or more per week.

Tenured men are least likely to have a spouse/partner working 60 or more hours a week (12%), while tenured women are most likely (43%). Women are much more likely than men to report that their spouse/partner's job commitment is the same or greater than their own (57% vs. 26%).

Among faculty who are married or partnered, women are more likely than men to report spending the same amount of time or more time than their spouse/partner spends on the care of their homes, the care of their children, and the care of their other dependents (*Table 6*). The table includes a point of comparison from the 1989 Assessment.

TABLE 6: Time Commitments of Married/Partnered Men and Women

Year of report	Commitment	Women	Men
2001	Spouse/partner spends the same or greater amount of time on care of *house*.	64%	95%
2001	Partner/spouse's time commitment to *child care* is the same or greater.	46%	97%
2001	Partner/spouse's time commitment to care of *other dependents* is the same or greater.	62%	96%
1989	Spouse/partner spends the same or greater amount of time on *housework and child care*.	26%	97%

Women more than men report that their career considerations have been of "major importance" in planning if and when to have children (71% vs. 40%). The gap has widened since the 1989 Assessment, when 65% of women and 45% of men indicated that career considerations in family plans had been of "major importance."

Among men, a greater proportion of non-tenured than tenured faculty report that career considerations in family plans have been of "major importance" (59% vs. 33%).

The MIT Environment

Nearly half (48%) of non-tenured faculty and a third (36%) of tenured faculty do not view MIT as supportive of their personal/family responsibilities. WFD notes that "Faculty typically report that MIT's pace and pressure have a negative effect on their well-being, especially with regard to their personal and family life. Additionally, pace and pressure limit their opportunities to interact with colleagues—one of the main reasons they come to MIT."

One in four tenured women and one in seven tenured men have very seriously considered leaving MIT in the past year. (Only five percent of those who have very seriously considered leaving are 65 or older.) Career opportunities are most frequently cited as a reason to consider leaving. WFD observes that "This would be considered a 'pull' factor, a reason that faculty are attracted away from the Institute. There are aspects of the MIT culture, however, that would be considered 'push' factors—factors that make faculty vulnerable to an offer to leave." Among those faculty who are seriously considering leaving, a number cite "push" factors: over half are dissatisfied with their quality of life and at least a third feel isolated in their departments. While one in four non-tenured faculty members have very seriously considered voluntarily leaving, it is difficult to disentangle the push and pull factors when the probability of obtaining tenure is a factor at play.

What are Faculty Asking For?

To manage work and personal/family life, faculty want:

- **Professional support.** "Of great value" to the largest proportion of faculty are:
  - More staff support to help faculty get their work done
  - Resources and technology for home offices
  - More assistance from department heads to ensure success of their work
  - Strong mentoring

  See *Table 7* for complete list.

TABLE 7: Professional Assistance: percent of all faculty who rate the item "of great value."

49%	Increased staff support
47%	Resources and technology for my home office
32%	Greater assistance from department head to ensure success of work
30%	Strong mentoring
28%	More opportunities for professional interaction
26%	More opportunity to influence key dept. decisions
24%	Dedicated space for faculty to socialize
22%	Greater support from department head when personal needs arise
22%	Enhanced information about procedures & resources
20%	Resources and technology for staff's home office
19%	Comprehensive orientation for new faculty
17%	More opportunities for social interaction

- **Personal support.** The initiatives "of great value" to all faculty are:
  - Housing assistance (34%) (for non-tenured faculty 66%)
  - Temporary/backup child care services (25%)
  - Paid leave/teaching relief for family care (24%)
  - More support from department heads when personal needs arise (22%)
  - On-site or near-site child care (21%) (for non-tenured faculty 42%)

  See *Table 8* for complete list, by tenure status and gender.

TABLE 8: Personal Assistance: percent of faculty who rate the item "of great value."

Personal Assistance	Tenured		Non-Tenured	
	Men	Women	Men	Women
Assistance with housing	21%	21%	66%	69%
Temporary/backup child care services	15%	27%	38%	62%
Paid leave/teaching relief for family care[a]	14%	33%	41%	54%
On-site or near-site child care centers	13%	12%	39%	54%
Assistance with employment for spouse/partner	8%	4%	44%	17%
Enhanced information on elder/adult dependent care	12%	24%	12%	23%
Part-time post-tenure appointments[a]	10%	21%	9%	31%
Extended tenure clock for new mothers[a]	5%	9%	21%	38%
Part-time pre-tenure appointments	2%	7%	7%	25%

a. *MIT's policies were revised after the survey was conducted and now provide this; see https://web.mit.edu/dept/libdata/libdepts/d/archives/facmin/011219/011219.html#family.*

Proposals for Faculty

In MIT's pressured environment there appears to be too much to do, too little time, and too few resources. The Council finds many measures in this study indicating unacceptably high levels of stress and burnout, and dissatisfaction with quality of life across the entire faculty. Compounding the difficulties, a number of faculty subpopulations experience extreme pressure.

One of the most striking findings in this survey is the gap that seems to exist between older male faculty (45+) and all other faculty members. Our contractor reports that "this is not entirely unexpected as it is seen at similar organizations that were 'designed' for men who have wives who do not work outside the home or who work part-time." At MIT, women and younger male faculty are less likely than older tenured men to have spouses or partners who do *not* work outside the home. As a result, women and younger male faculty disproportionately suffer the effects of the intense work environment.

Life at MIT may indeed be easier for some older tenured men than for other faculty subpopulations, but the Council concludes that, *for faculty across the board,* the MIT environment presents hardships and obstacles to a productive work life and satisfying personal life.

In response to these troubling findings, the Council's members offered many comments and suggestions, including concepts requiring further research. The Council believes that issues as broad and deep as the ones posed by this survey merit—require—thoughtful consideration, not quick and cursory responses. The imperative confronting MIT now is to proceed both cautiously and courageously: with great respect for the culture and values that have served MIT well for so many years, and with keen awareness that a great institution cannot be a static one.

The Council on Family and Work recommends that a Provost-appointed Committee consider all suggestions carefully, and devote substantial energy to developing new approaches to these problems, some of which are deeply embedded in MIT culture. This work would be coordinated, as appropriate, with CFW's Task Group on Faculty Issues, the Council on Faculty Diversity's

Working Group on Quality of Life, and the Committee on Faculty-Administration. The Committee will explore the complex web of issues that underlie quality of life dilemmas for MIT faculty; try to understand how our peer institutions address quality of life concerns; seek comparative data; make recommendations to senior administration; and, if requested, assist MIT administrators in implementing those recommendations whose immediate benefits would be clear and unambiguous.

These very complex issues require a Committee's careful deliberation. However, there is also a simple and inarguably beneficial step that could be taken immediately.

Clearly communicate to faculty the revised Institute family support policies. MIT's policies—to stop the tenure clock for new mothers, to provide paid leave/teaching relief for family care, and to allow part-time tenure appointments for family care—need to be disseminated effectively to faculty who have or anticipate having family care responsibilities, and to prospective new faculty. In addition, deans and department heads need to be educated about the policies' implementation. Senior leadership must ensure that faculty are able to use these options without career repercussions. The Council recommends that a communication initiative for these policies and benefits be implemented as soon as practicable; this initiative should be coordinated with the activities of the recently-established Family Policies Oversight Committee, chaired by Prof. Sam Allen.

Issues and Considerations for the Provost-appointed Committee

There are many theories and some data on what is driving stress and pressure at MIT on a daily basis, but the picture is incomplete. It is difficult to ascertain how much of the perception of faculty stress is driven by increases in actual work (e.g., grant writing), reductions in administrative support, psychological factors related to more competition, family and personal responsibilities, a changing mix of students and their demands, and other factors. Focused qualitative investigations may be needed to identify the factors fueling pace and pressure at the Institute as well as the costs associated with it. The Committee should monitor any natural experiments that occur when departments or schools initiate change in their own spheres, and if possible, foster limited experiments with new policies before proposing their

adoption Institute-wide. The issues are complex and varied, and the Council urges that the Provost-appointed Committee gather and examine additional evidence relating, but not limited, to all of the issues and proposed solutions listed below.

- **Root causes of pace and pressure.** The intense work environment results in extremely long hours for faculty coupled with high stress and burnout. Other possible costs are attrition, health care, and difficulty with recruitment. While certain interventions might help faculty *manage* the pace and pressure, more systemic solutions must be found that will reduce or modulate the stressors themselves. For example, in order to avoid "mission creep," new initiatives (and older ones as well) might be reviewed to assess their impact on faculty quality of life. MIT must engage its senior leadership in creating the vision and action plan that will address pace and pressure at the Institute.

- **Promotion process.** Balance must be sought between its positive factors, which promote the excellence of the faculty, and its negative factors, with their debilitating consequences.

- **Balancing family and personal responsibilities with work.** The burdens of managing family and work demands fall disproportionately on women and younger male faculty. Compounding this difficulty is the "two-body problem" in which a spouse or partner lives in a different community for work reasons; four out of five non-tenured faculty have a spouse or partner, and among them, 16% have dual-career commuting marriages/relationships.

- **Culture, incentives and accountability.** MIT's cultural norms should be analyzed, and change recommended for those that may not be necessary or effective. Some examples of such norms are the attitude that more—whether applied to papers or hours—is always better and that work must be a 24/7 proposition. (Note that there is healthy contention about the extent to which these cultural norms may be the wellspring of excellence at MIT; as noted in the closing paragraph on page 21, careful attention must be given to insure that efforts to make MIT a more congenial workplace do not inadvertently have a detrimental affect on the Institute's high standards and proud traditions.) Develop incentives for administrative officers to improve faculty well-being and ensure accountability when goals are not met.

- **Offering assistance with housing.** This is a high priority for faculty, especially for non-tenured faculty. Many faculty commute long distances to find affordable housing, detracting from a sense of community, and adding the time and stress of a lengthy commute to an already demanding schedule.

- **Department heads.** Department heads and their equivalents[2] are a crucial nexus in achieving cultural change, and they are already overburdened and

2. The Sloan School is organized by areas of concentration, rather than departments.

undersupported. They need better support themselves, as well as clearer expectations with respect to their own roles in assisting and supporting faculty. Faculty—particularly women and non-tenured men—are clearly seeking more mentoring and support from their department heads, both in ensuring the success of their work and obtaining support when personal issues arise. Senior leadership is essential in ensuring that department heads recognize their pivotal role in supporting the faculty in their departments. The New Department Head Orientation, piloted by Human Resources (HR) this year, is a step in this direction and might be expanded to provide more guidance in this area.

- **Life-cycle of the academic career.** An academic career spans 30-35 years. Perhaps different phases of one's academic career could be dedicated to different academic responsibilities that reflect changing family and career circumstances and demands. Perhaps one's early career, when family and promotion pressures peak simultaneously, and flexibility is demanded, should be devoted more to research. In later years, as family pressures taper off, more teaching could be accommodated. If MIT wishes to promote and sustain a diverse academic community, some choices such as these may have to be considered.

- **Resources.** Should administrative support, resources, and technology for home offices be increased, recognizing that increased home office support could well encourage still longer working hours for faculty? Are current staff being effectively utilized? Might work process improvements result in better support for faculty? Perhaps administrative staff support should be increased, or existing staff support be reorganized or restructured; see also *Staff Survey Findings*, Recommendation *3*, "MIT should conduct workload analyses with the goal of reducing hours and decreasing stress and burnout for post-docs and campus administrative staff." Perhaps every faculty member, or at least every junior faculty member, should be given funds for one graduate student or post-doc per year. Another possibility would be to give every faculty member discretionary funds and access to advice about setting up a home office.

- **Collegial interaction.** Faculty are attracted to MIT by their prospective colleagues more than any other single factor, and MIT should consider ways that it can facilitate meaningful interaction among faculty, perhaps by rewarding collaborative research or service efforts. A quarter of faculty say they would greatly value a faculty club.

- **Metrics and measurement.** Develop metrics which assess the health and well-being of the faculty and monitor these metrics periodically, perhaps every three to five years. Make the fullest possible use, given considerations of confidentiality, of data available internally at MIT.

- **Evidence from peer institutions.** Benchmarking and peer institution studies, such as the triennial HERI (Higher Education Research Institute) surveys, can be used to help gauge whether the pace, pressure, and stress levels at MIT, and

MIT's possible health costs or attrition rates, differ from comparable institutions. Interviews with individuals who have left the Institute as well as with those who have declined offers from MIT might isolate how heavily the Institute's pace and pressure contributed to their decisions. A related investigation might examine graduate programs at MIT, a primary pipeline for MIT's future faculty, and explore the reasons why some graduate students leave MIT programs. Also to be explored by the Committee are ways to develop comparison data across time at MIT, and with peer institutions (so far, WFD has not gathered comparable data from other research universities).

- **Priorities.** The urgency of each need must be weighed against resource limitations, fiscal constraints, and time pressures. To achieve sustainable change, a careful and practicable sequence of actions is required.

- **Choices.** Wherever possible, faculty members should be offered choices about the resources that are most important to them. Some individuals may value housing assistance more than additional child care, or a part-time graduate student more than a home office. Such preferences might change during a faculty member's career. Cafeteria-type benefit plans might also offer additional flexibility and should be studied more closely.

- **Analysis of minority populations and a broadened working definition of diversity.** MIT is committed to increasing faculty diversity and to enhancing the quality of life for minority faculty members. Yet we know little about our minority populations and were unable to learn as much as had been hoped from this survey. The Committee will need to find ways of understanding more fully the experience of minority faculty members, as well as increasing the value placed by the community on the growing diversity of family structure, lifestyle, and life experience of its faculty.

Healthy and beneficial institutional change is a deliberate, carefully reasoned, and painstaking process. The issues themselves are daunting and resilient: we have been grappling with some of them for years, as evidenced by current findings that echo the 1989 Assessment. All of the suggestions and recommendations cited above need to be considered fully, and additional ones formulated. Real breakthroughs may lie in concepts that have yet to be formulated. We would not expect the Provost-appointed Committee's continuing research to reveal surprises or "quick fixes" of any kind. What we do expect is that a conscientious and discriminating analysis of our own history and culture and the practices of our peer institutions will illuminate those aspects of MIT that can and should be recalibrated, and those that should not be tampered with.

Appendix A: Response Rates and Methodology

Response Rates

Overall, the response rates (following reminders sent by mail and email) ranged from 30% to 40%. The population groups surveyed and their response rates are summarized in *Table 9*.

TABLE 9: Survey Response Rates

	Total Population	Respondents Number (%)
Faculty	956	315 (33%)
Staff	9309	3017 (32%)
Campus	7067	2115 (30%)
Lincoln Laboratory	2242	902 (40%)

Of the 956 MIT faculty, 315 responded for an overall response rate of 33% (*Table 10*). Among faculty, response rates were similar for tenured and non-tenured men. Among women, tenured women were much more likely to respond than non-tenured women. In fact, only 13 responses were received from non-tenured women so these findings should be considered less reliable.

TABLE 10: Faculty Population and Respondents by Tenure and Gender

	MIT Population					Survey Respondents					Respondents as % of Population		
	Total	Men		Women		Total[a]	Men		Women				
		#	%	#	%		#	%	#	%	Total %	Men %	Women %
Tenured	691	594	86.0	97	14.0	223	174	78.0	49	22.0	32%	29%	50%
Non-tenured	265	210	79.2	55	20.8	80	67	83.8	13	16.3	30%	32%	24%

a. A total of 315 faculty surveys were returned; twelve did not indicate tenure and gender information.

Faculty respondents were primarily male (84%) and primarily Caucasian (89%). There is a somewhat greater representation of minorities among non-tenured

faculty—17% of non-tenured faculty are non-Caucasians compared with 9% of tenured faculty—but the actual numbers of minority respondents were too low to permit analysis. Otherwise, these data compare very well to population proportions for faculty including rank by gender, years at MIT, and race (*Table 11*).

TABLE 11: Faculty Profile of Population (n=956) and Response Pool (n=315)

Tenure by Gender	Tenured Men	Tenured Women	Non-Tenured Men	Non-Tenured Women
Population	62%	10%	22%	6%
Response Pool	57%	16%	22%	4%
Race	**Asian/P.I.**	**A.A./Black**	**Cauc./White**	**Hisp./Latino**
Population	10%	3%	86%	2%
Response Pool	7%	2%	89%	1%
Years at MIT	**< 5**	**5–9**	**10–14**	**15+**
Population	24%	16%	10%	50%
Response Pool	26%	14%	12%	48%

Design and Fielding of the Survey

In designing the survey, input was sought from senior administrators as well as faculty and staff. First, in spring 2001, executive interviews were conducted to help frame the research questions. Then, during the summer, focus groups and interviews to identify key topics for the survey instruments were conducted for and with faculty and staff.

The Quality of Life Surveys were conducted by the Council on Family and Work in the fall of 2001. All faculty and staff working 50% time or more were invited to participate.[3] Different versions of the survey instrument were developed for faculty, campus staff, and Lincoln Laboratory staff. Because this survey was intended in part as a follow-up to the 1989 Assessment conducted by the Ad Hoc Committee on Family and Work,[4] several questions were repeated to allow for comparisons.

3. Quality of life questions were developed for graduate students and included in a separate general survey of graduate students fielded in late fall 2001 by the Provost's Office.

Participation in the study was strictly voluntary, and the information provided has been held in strict confidentiality. The data were analyzed by an external contractor, WFD Consulting, Inc., a Watertown-based firm whose clients are primarily large corporations. WFD describes its expertise as lying in "services to help clients create conditions—both at work and in the community—that help people come to work, stay at work, and be effective at work." WFD presented its analysis of the data to the Council on Family and Work on February 26, 2002. Excerpts from WFD's analysis are cited throughout this report.

WFD reported the survey results to CFW in a summarized form so that the confidentiality of all respondents was preserved. Because of the differential response rates, all data were weighted to represent the true population proportions. For faculty, data were weighted by rank and gender. For staff, data were weighted by location (campus or Lincoln Laboratory), position, and gender.

Statistical Methods

Tests of Significance

For questions with ordinal responses (e.g., very satisfied, satisfied, neither satisfied nor dissatisfied, dissatisfied, very dissatisfied), a Kruskal-Wallis test was run on the groups of interest (e.g., tenured male, tenured female, non-tenured male, non-tenured female) to see if any significant differences existed among these groups. For questions with responses on an interval scale (e.g., stress and burnout index), an analysis of variance replaced the Kruskal-Wallis test at the same level of significance.

These tests were run at the 95% significance level, which may be interpreted as meaning that 95 out of 100 times, when a sample is drawn from the same population, one or more group differences under consideration will, in fact, be

4. The Ad Hoc Committee on Family and Work, chaired by Professor Peter Elias, was asked "to gather data on MIT demographics, to review current MIT practices affecting family responsibilities, and to recommend improvements." The Committee presented its preliminary findings at the Faculty Meeting of March 21, 1990; issued a report on May 25, 1990 summarizing focus group and survey results; and released its final report on November 7, 1990. The entire 1989 Assessment is often referred to as the Elias Report.

significant (i.e., not equal to zero). In this report, any quantitative measures cited in the text (not tables) were detemined to be statistically significant by WFD.

Weighted Responses

Weighting factors for faculty were calculated by tenure and gender based on response rates. As an example, 594 surveys were sent to tenured men and 174 responses received from them. Thus responses from tenured male faculty members were weighted by 594/174, or 3.41, to represent the entire cohort of tenured men. Similarly, responses from non-tenured female faculty members were weighted by 55/13, or 4.23. Therefore, each response from a non-tenured woman was weighted at 124% of a tenured man's response.

Non-responders

The first invitation to participate in the survey was sent to all faculty via email; the survey questionnaire could be completed interactively on the Web using a browser. Anyone who preferred to complete a paper questionnaire could request one and was sent a hardcopy form. Everyone who did not respond to the first invitation was automatically sent a reminder email as well as a paper copy of the questionnaire. There was no further follow-up with non-responders after the second round, and no detailed analysis of the non-responding population to compare it to the responding population.

Appendix B: Dependent Care for Faculty and Staff

Findings

Dependent care issues are salient at MIT. Nearly half of faculty and almost as many staff have children currently living at home, and over a fifth of faculty and staff expect to have or adopt a child in the next few years. Parents face difficulties finding child care when their regular care is not available, for mildly ill children, and for infants and toddlers. Affordable child care is an issue for staff. Virtually the entire MIT community supports on-site or near-site child care at MIT; non-tenured faculty and post-docs are the most likely to say it is of great value to them.

MIT's investment in on-site child care is greatly valued by a substantial population at MIT, and Institute members strongly believe that MIT should meet this need, whether or not they themselves would use these facilities.

Elder care is a growing concern. A quarter of faculty and staff expect to have this responsibility in the near future, while one in seven say they are currently engaged in elder care.

Recommendations

1) The Institute should continue its track record of improving and expanding child care resources.

In particular, three actions are recommended:

- **Follow up with commitment to expand on-site child care capacity.**

Responding to faculty and staff demand for an increase in on-site child care and to a serious shortage of local infant and toddler care, MIT is substantially expanding its total child care capacity. Within the next three years, capacity will grow from 123 slots to 277 or more slots: roughly 128 slots on campus, and 149 at Lincoln Laboratory.

Currently, MIT's two campus facilities, located within graduate housing complexes at Eastgate and Westgate, serve a total of 55 children. In January 2004, a new child care facility, serving 73 children, will open in the Ray and Maria Stata Center for Computer, Information, and Intelligence Sciences. Support for the campus expansion has come from the Provost. Campus programs offer full- and part-time child care and occasional back-up child care for children from 15 months through kindergarten entry; the Stata Center will be able, in addition, to offer infant care. An additional 75 slots were recommended by an Ad Hoc Faculty Committee on On-site Child Care in 1998. Studies are underway to explore additional expansion opportunities at existing and new campus child care sites.

At Lincoln Laboratory, construction has been completed to increase the capacity of the existing child care facility on the grounds of Minuteman Regional High School from 68 to 149 children. Lincoln Laboratory will offer full-time child care for children from infancy through kindergarten.

The expansion of campus child care has been accompanied by a change in management structure. The Center for Work, Family, and Personal Life now oversees campus child care, and Bright Horizons Family Solutions, Inc., an outside child care firm, has been engaged to provide management services to existing programs at Eastgate and Westgate; beginning in 2004, Bright Horizons will also manage the new program at the Stata Center.

- **Initiate a back-up child care program.**

A modest increase in resources would allow back-up child care to be made available; this is very valuable to younger faculty, and it is a need perceived by staff as well. For example, Harvard subsidizes back-up and emergency child care through a local, vendor-managed, in-home service, Parents in a Pinch, which provides caregivers to homes in the greater Boston area. Parents contract with the vendor individually, but at a somewhat reduced cost.

- **Address issues of affordability and best use of facilities by means of the newly established MIT Child Care Advisory Committee.**

An MIT Child Care Advisory Committee is being established as an advisory group to the Center for Work, Family, and Personal Life to provide ongoing

guidance regarding child care needs. This Committee will help assure the best use of on-site facilities, resulting in a mix of programs to meet the needs of the MIT community. The Council recommends that special attention be given to infant and toddler care and the issue of affordability.

2) Given the expected rise in the number of MIT employees who will provide care to elders, MIT should provide more comprehensive resources for elder care.

Resources must be useful for faculty and staff who provide care for elders locally as well as for those managing care at some distance.

Appendix C: Sample of Faculty Suggestions

Table 12 below summarizes the suggestions received from the faculty in response to open-ended questions in the survey about ways to improve quality of life at MIT. Following the table are sample quotations and paraphrases drawn from this set of responses. The Council on Family and Work recommends an analysis of all of the faculty comments as part of the Institute's further study of these issues.

In *Table 12*, the "Total #" column indicates the total number of comments submitted by respondents on each subject; not all of these comments are listed in this appendix.

TABLE 12: Summary of Responses

Category		Total #
Professional Growth and Advancement	Tenure (promotion, evaluation)	41
	Sabbaticals	4
	Mentoring	16
	Administrative and Committee Load	39
	Compensation, Funding	51
	Fairness	5
	Reward and Recognition	10
	Orientation for New-Hires	3
	Social Interaction	16
Teaching and Students	Teaching Load and Class Size	26
	Faculty-Student Ratios	14
	Faculty-Student Relationship	6
	Student Resources and Requirements	21
Administrative Needs	Administrative Support (amount, quality)	78
	Technology	26
	Infrastructure (space, parking, construction, security)	61
Personal and Family Needs	Balance (pressure, stress, time)	41
	Family (child care, elder care)	34

TABLE 12: Summary of Responses (continued)

Category		Total #
Employee Benefits	Benefits, General	6
	Housing	26
	Health Care	8
	Food	2
Institutional Governance	Leadership and Governance	28
	Bureaucracy (departmental coordination)	31
	Communication	14
	Resources, General	9
	Attitude and Outlook	17
Other	Other	12
	Total	645

Below are the sample quotations and paraphrases.

Tenure (promotion, evaluation)

1 "Explicitly consider the candidate's broader life constraints in making promotion/tenure decisions"

2 Establish own tenure standards and be less influenced by numbers of outside letters

3 "Get rid of untenured associate professor promotions, which consume an inordinate amount of time that is simply replicated two years later"

4 Professional advancement for full professors (wage stagnation for senior faculty)

5 Change expectations (can't possibly achieve excellence in both teaching and research)

6 "The whole tenure system works against a reasonable family life for women (the whole definition of a job here assumes a home back-up system, i.e. a wife); such rethinking will never take place unless many more women are in leadership positions here."

Mentoring

1 "Stronger mentoring for making professional and research decisions"

2 "It would help to have support for the senior faculty to help them learn how to be better mentors, and support junior faculty members emotionally (many top programs suffer for the lack of a positive human influence)"

Administrative and Committee Load

1 "Don't ask faculty to do so many administrative tasks that do not result in concrete outcomes"

2 "It's a great help that MIT has made many services available on the web, but that should not cause trivial administrative details to switch from support staff to faculty"

3 "MIT imposes a heavy and ineffective administrative burden on faculty (support from central administration and central services are very poor)"

4 "Each department head should be fair in distributing loads"

Compensation, Funding

1 "Put resources in the hands of those who are feeling pace and pressure and allow them to apply as it best suits them (discretionary money is a great lubricator for all the machinations of life at the Institute)"

2 Fund programs that help faculty better manage research and teaching (reengineering, perhaps unintentionally, appears to have increased faculty workloads in some cases)

3 "Salaries should be public so individuals can discuss perceived inequities with supervisor"

4 "Increased unrestricted research funds"

5 "MIT should consider basing faculty salaries less on market competition (e.g., pressure from external offers) and more on merit (e.g., research, teaching, and service to MIT)"

6 "Think twice before adding additional unfunded mandates (e.g. OCW and UPOP)"

7 "Salary inequities reinforce general sense that Institute doesn't really value or understand the field I work in"

Reward and Recognition

1 "No explicit rewards for many activities but clear penalties if research activity falls off"

2 "Most faculty feel compelled to meet the unrewarded expectations while also working frantically to achieve the research-based rewards (if MIT rewarded all contributions to the community (research, teaching, service) with equal enthusiasm, the faculty would be less inclined to spread themselves so thinly)"

3 "Give more reward to truly academic efforts, as opposed to short-term entrepreneurial activities"

Orientation for New-Hires

1 "Better 'standard' support to get rookies to learn the ropes (teaching, computer support, etc.)"

Social Interaction

1. "Cafe to discuss or guide guests to other than a cramped office"
2. Need a working faculty club or space for faculty to hang out informally for lunch

Teaching Load and Class Size

1. "Class sizes are way too big (class pace, level of expected preparation are so high that even a simple, basic course becomes a huge time-sink)"
2. "For junior faculty, keep number of different courses to be taught in the first few years to a max of 2 or 3"
3. "Tenure-track faculty often get stuck with difficult teaching assignments and find themselves competing with senior faculty to attract graduate students, which causes stress"
4. "Provide equitable distribution of teaching duties and consider redistributing teaching and service obligations to be leaner during times of known personal need (such as birth of a child)"
5. "During the past 15 years that I have been on the faculty, unfortunately, there has been a significant decrease in support for teaching (TA support)"
6. "The average teaching load in some departments in the School of Science is less than those in my department (in Engineering) and they seem to have more time for research, travel, and creativity"

Faculty-Student Ratios

1. "Increase head count when institute commits to new initiatives"
2. "Increase number of faculty or reduce number of students (graduate)"

Faculty-Student Relationship

1. "Encourage more adventurous advising of students"
2. "Drop graduate advisor role (use CMU's "Black Friday" model instead)"

Student Resources and Requirements

1. "Rethink the imposition of the "CI" requirement on top of the existing HASS-D requirement"
2. "No evening exams for students"
3. "High tuition for graduate students, especially those who have passed all subjects and need only to complete the thesis"
4. "Provide real graduate student fellowships (i.e. four year fellowships, or an annual amount that I could use for two or three students of my choice)"

5 "MIT should lead a national effort to get federal agencies to fund students directly rather than through research contracts and grants"

6 "Fund raising campaigns should invest in students' work in research, through a free tuition and stipend program for all graduate students admitted to MIT, in addition to the facility renewal program"

Administrative Support (amount, quality)

1 "More administrative support (accounting, purchasing, repairs, space, space modification funds, meeting rooms, classrooms)"

2 "Help from OSP in getting proposals correctly prepared/sent out"

3 "Better pay for better support staff"

4 "Higher quality staff support (in the sense of attitude and outlook)"

5 "MIT is under-staffed (secretarial support has been cut by 75% in my time here)"

6 "Quality of support staff (not an issue of low pay or inherent poor quality, more a combination of attitude and poor training)"

7 "Resources in the form of hard equipment, funding opportunities, and good collaborators are ample; on the other hand, resources in the form of technical support and the support to handle the paperwork required to maintain a competitive (in MIT terms) research program, are too little"

8 "Lack of administrative support (for most of my time here, I either have not had an Admin Asst. at all, or I have had someone with a very low skill level). Consequently, I have to do the work to compensate. This is to a large extent the result of good admin people going to the private sector where they make significantly better salaries"

9 "Too hard to find people to delegate to (contrast to industry where you can hire professionals at competitive salaries)"

10 "The quality of staffing is an important problem (with the increasing computerization of the office, many staff have not been able to keep there skills current and the support for faculty teaching and research has decreased)"

Technology

1 "Make on-line budget statements consistent, up to date, and readable"

2 "Computers for faculty that do not have to come out of research grants, especially given the new demands for open course ware"

3 "There is a need for non-traditional/high-tech support staff to help with computer technology issues (web pages, software/hardware installations, etc.)"

4 "Big initiatives are fine, but you can go a long way by fixing the little things like technology"

Infrastructure (space, parking, construction, security)

1 "Cover the Main Parking Lot and make it a multi-story atrium collaboratory café"

2 "Sloan is embarrassingly far below other b-schools in physical plant"

3 "Lack of adequate library resources, especially Dewey"

4 "Parking (if I do not get here before 10 am, I am unable to park)"

5 "The physical plant (buildings, etc.) is in poor repair (it took several months to get an air conditioner and three years to have broken glass replaced in my office)"

6 "Insufficient # of women's restrooms"

Balance (pressure, stress, time)

1 "Have fewer activities to concentrate on at any one time"

2 "Lower expectation that everyone will work 10+ hours, 6-7 days/week"

3 "There is simply too much for any one human being to do, especially if they do not have someone else at home taking care of them (all the maintenance stuff which is essential for being productive during the day)"

4 "Excessive teaching, advising, service, and committee load (reengineering at Institute level had the effect of dispersing work to centers, departments and individual faculty and staff)"

5 "Too many disruptions that lead to a fragmented schedule while on campus, thereby making a need to pursue much work at home"

Family (child care, elder care)

1 "Don't schedule meetings after 5:00pm"

2 "Alleviate pressure during childbearing years so that women faculty are not forced to risk their own health and the health of their future children in order to keep their job (e.g. excessively postponing childbearing is extremely risky)"

3 "The combination of early morning committee and faculty meetings and evening professional events at MIT make it extraordinarily difficult for faculty with children living at home to meet both professional and personal responsibilities"

4 "An on-campus care facility for short notice 'emergencies' (e.g. mildly ill child, snow day, spouse commitment, etc.)"

5 "Give us a good policy for elder care"

Benefits, General

1. "In the past, MIT would support travel to one scientific meeting a year; it no longer does"
2. "Cafeteria benefit plan so as not to discriminate against those without children/spouses"

Housing

1. "Temporary residences for new faculty (one year)"
2. "MIT needs to be much more generous with housing help, especially the down payment"
3. "Help junior faculty more with housing (MIT's second mortgage program is not very helpful)"

Health Care

1. "Mental health/counseling for students and staff is inadequate"
2. "Health insurance support for elder dependents, specifically parents"

Leadership and Governance

1. "Imposition of engineering institutional models on other fields for which it is inappropriate"
2. "The whole business of whether to give women extra time off from the tenure clock for having a baby could be perhaps better dealt with if all department heads were fair and understanding about any major event that happens to a junior faculty member (bitter divorce, serious medical crisis, etc.)"
3. "Stronger oversight of faculty over institute decisions rather than ineffective committees"
4. "Faculty and administration are competing rather than cooperating (administration needs to deal with faculty by patience, long-suffering, and love unfeigned; faculty need to work more cooperatively and think less adversarially about colleagues and administration)"
5. "Most importantly, I think the Institute sends a double-message right now about the need for faculty to engage more fully with students and the entire MIT community (I have never heard anyone from central administration urge schools and departments to take community involvement into account when making promotion and tenure decisions)"

Bureaucracy (departmental coordination)

1. "Lack of flexibility/cross-fertilization between departments/labs"
2. "Lack of rapid and efficient purchasing and shipping/receiving capabilities"
3. "Endless paperwork and regulations, and ridiculous budget and finance practice with unintelligible inconsistent account statements (expenditures negative of income, etc.)"

Communication

1. "Separation between faculty and administration"
2. "What is completely missing at MIT is transparency at almost every level (this is the root of the problem)"

Resources, General

1. "Make sure new initiatives have adequate resources"
2. "Support to invest in new fields in research"
3. "Support for faculty involvement in athletics"

Attitude and Outlook

1. "Encourage faculty to be active in spheres outside their routine profession and department"
2. "Reduce rigidity of academic calendar (encourage subjects that don't begin and end at the usual term boundaries), like trimester system"
3. "Teach everybody here to praise others and impress upon them how important this is (we are trying to measure up to some impossible standard)"

Other

1. Boston area doesn't have the infrastructure to support us (hard to find good schools, tight community, good in-home child care, with a sane commute around here, even before you think about housing costs); I was on sabbatical at another university which seems to do better on many of these fronts despite being located in an expensive housing market.

Appendix D: Council on Family and Work

Co-chairs

Roy E. Welsch[5]
- Professor of Statistics and Management Science
- Director, Center for Computational Research in Economics and Management Science

A. Rae Simpson
- Co-manager, MIT Center for Work, Family, and Personal Life

Members

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- Chair, Task Group on Workplace Flexibility

David Saff[6]
- Graduate Student, Electrical Engineering and Computer Science

Joyce D. Yaffee
- Director, Human Resources, Lincoln Laboratory

5. Claude Canizares served as co-chair of the Council from 1999 through 2001. The Council gratefully acknowledges his contributions and guidance during the planning and design of the Quality of Life Survey.

6. Smaranda M. Moisescu served on the Council as a graduate student from 2000 through 2001. Christopher D. Coldren served on the Council as a post-doctoral fellow from 2000 through 2002.

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Co-chairs

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Other committee members and key contributors[8]

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Terry W. Knight
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Helen Elaine Lee
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7. Roy Welsch served as co-chair of the Quality of Life Task Force from its inception in 2000 until he assumed his role as co-chair of the full Council in February 2002.

8. The Council gratefully acknowledges the contributions of Christopher D. Coldren, Post-doctoral Fellow in Biology, from 2000-2002, as well as the work of Martha Muldoon, independent work/family consultant, from June through November 2001.

Appendix E: Acronyms

CFW	Council on Family and Work
DLC	department, lab, or center
HASS	Humanities, Arts, and Social Sciences
HERI	Higher Education Research Institute
HR	Human Resources
WFD	WFD Consulting, Inc., the contractor assisting with the survey design, implementation and analysis