1. Introduction and Summary

This report describes aspects of the MIT Computer Science environment that hinder the professional and social development of many female graduate students and research staff. The environment is challenging, competitive, and difficult for both men and women. However, many women encounter additional problems that unfairly limit their academic, professional,and personal growth. These problems are widespread and have led to a perception outside MIT that this environment is particularly harsh for women. As a result, many women who start graduate work at MIT choose to leave before finishing their degrees, and many women who complete a graduate degree suffer unnecessarily while they are at MIT, because of their gender. In addition, many women choose not to apply to our Department for graduate work or do not come when accepted.

The principal conclusions of this report are:

- Although not a generally accepted fact, the women here are as qualified as the men. In order to realize their potential, women must be given the same opportunities as men to participate in and benefit from all aspects of the professional community.
- Many individuals in the community, either consciously or subconsciously, have expectations of women that are different from their expectations of men.
- Pervasive subtle discrimination can do as much damage as, if not more damage than, isolated incidents of overt discrimination.
- An uncomfortable social atmosphere interferes with a woman's ability to work productively.
- Responsibility for change rests with the entire community, not just with the women.
- Many problems would be alleviated by increasing the number of women.

We have two major goals in writing this report. The first is to heighten other people's awareness of the severity of these problems and of the effect of their own actions on the women around them. The second is to let women in other professional communities with similar problems know they are not alone. We believe that members of other minority groups encounter many of the same problems we describe in this report. We discuss, however, only our own experiences as a group of women in a predominantly male environment.

This report was written by female graduate students and research staff in Computer Science. At the graduate level, the Department of Electrical Engineering and Computer Science (EECS) is divided into six academic Areas, one of which is Computer Science. (See Table II-3 on page 35 for a

breakdown of the Areas.) Most of the problems described in the report are not specific to MIT's Computer Science Area; many of us have experienced similar difficulties at other academic and research institutions. It is to our Department's, Area's, and laboratories' credits that we received support and encouragement from the administration and faculty in preparing this report.

The next two subsections present an overview of the problems encountered by women in the Area of Computer Science. Problems related primarily to professional interactions are discussed in one subsection; problems related primarily to social interactions are in the second subsection.

1.1 Professional Inequality

Graduate education and research are more difficult for women in Computer Science at MIT than for their male colleagues. There are two significant obstacles that women have to overcome in the professional environment.

- Preconceived notions about the seriousness of women's commitments as Computer Scientists.
- Negative judgments of women's qualifications made on the basis of gender.

Women are handicapped by doubts about the seriousness of their professional intentions. Comments like "Jane came to MIT only to get a husband" make women feel that their academic and career goals are not treated with respect equal to that accorded to their male colleagues' goals. Personal comments about women made in professional situations -- for instance, during class lectures or technical discussions -- convey the attitude that women are there for personal reasons, not professional ones.

We believe that most faculty, staff, and students want to treat all members of the community fairly, as individuals with different talents and abilities. However, despite good intentions, their behavior can express different expectations for women than for men or may be interpreted as doing so by others. Women come to MIT to receive a technical education and begin careers, just like their male colleagues. Behavior that implies or may be interpreted otherwise, especially in professional situations, is harmful to women.

The qualifications of female Computer Science graduate students are systematically doubted at MIT. Some female graduate students are told that they have poor backgrounds, although male graduate students with the same undergraduate background are not told that. Frequently heard comments like "I really don't think the women students around here are as good as the men" do great

damage to women's self-images. In an environment that is difficult for all students, such comments make it even harder for women to perform well. It is not possible to succeed as a researcher if one's technical judgment and expertise are not respected by others in the field. It is very difficult to achieve a level of expertise if, as a student, one's peers and advisors have low expectations for one's success.

The low percentage of women in the Area may give the erroneous impression that there are a lower percentage of well qualified women than men. The women at MIT are well qualified. According to the Chairperson of the Computer Science Admissions Committee and the Directors of the MIT Laboratory for Computer Science and the Artificial Intelligence Laboratory, everyone who is accepted into Computer Science at MIT is qualified. Over the course of several years, some faculty members may not encounter any exceptional women students, while over the same period they may encounter several exceptional men. Consequently, some of them may conclude that women are inferior. Only the presence of more women will rectify this situation.

The obstacles described above sometimes are manifested through overt discrimination, for example explicit verbal comments that convey negative attitudes about women. Most of this report addresses more subtle behavior. Often, subtle behavior is not recognized as discriminatory, for two reasons. First, the actions often are not *intended* to be discriminatory; the people who convey biased attitudes toward women may be well-intentioned. Nevertheless, the *effect* of their behavior is to undermine the professional image of women held by their colleagues and the women themselves. Second, any particular incident might appear trivial when viewed by itself. However, when women experience such incidents daily, the overall effect of the environment is much greater than the sum of the individual incidents [8].

Because subtle discrimination is harder to recognize than overt discrimination, it sometimes does more damage. Constant exposure to negative comments diminishes a woman's self-esteem and leads her to believe that she cannot succeed. If she does not recognize such comments as discriminatory, she may not know the proper framework in which to deal with them; she may even blame herself for the problem.

1.2 Social Inequality

All students try to develop the social side of professional relationships. A large component of graduate education comes from informal interaction with colleagues. Informal settings such as luncheons and technical "bull sessions" provide relaxed atmospheres in which students can receive feedback on their progress from peers and supervisors, as well as valuable technical knowledge.

Personal relationships among colleagues also foster the development of understanding and respect, which contribute to a student's self confidence and ability to work well in groups. Often, women feel that they cannot develop the social side of professional relationships because they run the risk of attracting romantic attention that will erode the relationship. They are more likely to miss important opportunities for feedback and exchange of technical ideas, because they are not as easily accepted in informal settings as male colleagues.

Students also try to develop a social life in their professional environment -- a social life that does not necessarily include romantic relationships. For women, the development of friendships often is inhibited by an attitude among male graduate students, faculty, and staff members that a woman who is not romantically involved with someone is "available" and looking for a romantic relationship. Women feel that many men are not able to view them as a friend, but only as a potential date. As a result, women's actions are often misinterpreted; casual friendliness is mistaken for romantic overtures.

Within the Computer Science community at MIT, female graduate students are an extremely small minority. Many of the men in the laboratories are unaccustomed to being around members of the opposite sex in professional contexts. This gives rise to differential treatment of women that can make it more difficult for them to work effectively. The imbalance harms both men and women. Women are inundated with social attention, creating an uncomfortable social atmosphere that interferes with their academic progress. Women must spend extra time and energy dealing with problems that arise from the social imbalance. Some women react by becoming wary of all new men they meet. Thus, some men are confronted with negative reactions from women to seemingly innocuous, friendly overtures. In addition, men are frustrated by the lack of women with whom to interact socially.

Finally, social behavior in a few research groups sometimes approximates that of the locker room. Such things as demeaning posters, cards, and comic strips, sexist jokes, and inappropriate attention in the form of staring and following serve to remind women that they are different. As a result, many women feel excluded from the community and become isolated.

1.3 Organization of the Report

The rest of this report is organized as follows. Section 2 contains the bulk of our discussion of particular issues and problems. This discussion is based on a list of representative comments and incidents that contribute to an inhospitable environment for women. The original list and a revised

version were prepared by female Computer Science graduate students and technical staff and were distributed throughout the Area in 1981.[1] This section also discusses the reactions of the community to the problems raised by the list. Reactions of both men and women were strong and often highly emotional. In general, the men's reactions were positive; however, negative reactions often followed protestations of sympathy.

Section 3 contains recommendations that we feel are the key to improving the MIT Computer Science environment. Our general recommendation to individuals throughout the community is that they think more deeply about how their actions and words may convey negative attitudes, especially negative attitudes toward women. This report is filled with examples of how such attitudes can be conveyed, sometimes in subtle ways.

Some women have received positive reinforcement and encouragement from their research groups and the faculty at large. Section 4 is included both to present examples of supportive behavior patterns and to emphasize that not all of our experiences at MIT have been negative ones.

The bibliography is followed by three appendices. Appendix I lists the names of the authors of the original list on which this document was based: female graduate students and technical staff in Computer Science. Appendix II is a brief history of MIT women in EECS, with an emphasis on the Computer Science Area of EECS. It also contains the numbers of female students enrolled in the Department and Area over the last 10 years. Appendix III presents comments by some members of our community.

[1] Copies of the revised version of the list can be obtained by contacting the EECS Graduate Office at MIT, Cambridge, MA 02139.