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Diversity Statement

I am personally motivated to increase the female representation in computer science, or more broadly, in science and engineering. According to statistics released by National Science Foundation, female recipients constitute merely 18.2% of the Bachelor's degrees awarded in computer science in 2010. Since I am a female in computer science, this lack of gender diversity in the field is not only relevant but also a pressing issue whose impact I have experienced first-hand.

An effort that I made to increase diversity is to organize a mentoring program that connects female undergraduate and graduate students at MIT, where I studied as a graduate student and am now working as a postdoc. Initially, I started looking into such a mentoring program, because I wanted to be a mentor for female undergraduate students. There was such a program in place, but it turned out that the student leading the effort was graduating, and she had not found anyone to take over the program. It would be a shame for the program to terminate, so I decided to take the lead to organize the program for the following year. With another undergraduate student, Ashley Smith, we organized the program for Fall 2013, with participations from 46 students and postdocs (half mentors and half mentees) in a wide range of science and engineering fields.

We had two main objectives that we wanted to achieve with the program. First, we wanted to provide a support network for female students, so that they have a safe and supportive environment to discuss issues that they encounter, which are potentially gender specific. Second, we wanted to foster mentoring relationships between female undergraduate and graduate students, so that the undergraduates can seek advice and encouragement from someone more senior regarding their academic and career choices. Thus, we paired up mentors and mentees based on their interests in academic subject matters and career paths. We asked the mentor-mentee pair to meet at least four times throughout the term. In addition, we formed "mentoring groups," each consisted of two mentor-mentee pairs, and encouraged the group to meet together.

I believe that these objectives can help retain female students in science and engineering fields. Due to various factors such as cultural norms, external influences, and internal responses, a female student in a male-dominated environment can often feel a sense of "misfit" and self doubt about one's ability in being successful within the field (Margolis et al., 2000). Over time, the sense of misfit and self doubt can gradually erode one's confidence and interest in the subject. It has also been shown that female students tend to underestimate their own abilities, whereas male students tend to attribute their successes and failures in a self-affirming way. The support network provides a safe environment for the female students to discuss these issues. Hopefully, by raising the awareness of these tendencies and that many of us struggle with similar challenges, the students would feel that they are not along and consider the possibility that the self doubt is more psychological than grounded in reality.

Based on my own experience, I believe that it is extremely valuable to have a mentor with whom you can discuss career options and help clarify your own interests and abilities. Thinking back the time when I was an undergraduate, I was fortunate that my undergraduate institution, UC San Diego, had a warm and supportive environment. I made connections with several faculty, and their support and encouragement were integral to my decision to attend graduate school and my choice of an academic career. At MIT, it is not always easy for an undergraduate to form such a relationship with a faculty, unfortunately. The classes tend to be large, and the faculty don't typically have regularly scheduled office hours. One must be proactive to seek out mentoring relationships. By fostering a relationship between undergraduate and graduate students, we hope to fill that gap and provide an additional channel for undergraduates to seek advice and receive encouragement.

For me, it is rewarding to see cases where the pairing was successful. The program enjoyed some successes — multiple pairings indicated that they plan to continue to meet with each other after the term

ended. I have even received an inquiry about whether a similar program exists for male undergraduate and graduate students. Ashley and I plan to continue with the effort in Spring 2014, and incorporate feedback received and things learned from running it in Fall 2013.

As faculty, I would like to continue my effort to increase gender diversity in science and engineering fields, via opportunities such as this mentoring program that I organized. Furthermore, I take it as my responsibility to help improve the retention rate of female students in computer science, at both the under-graduate and graduate level. I believe that, a good way to address the challenges faced by female students that I mentioned above, both culturally and confidence-wise, is to bring awareness to these issues and to be a supportive mentor to students to provide encouragement and guidance at the appropriate time. I would proactively reach out to students in my class and foster relationships with them. Finally by demonstration, I hope to show students that a woman can actively contribute to and have a successful career in computer science.