The Women in Science Club at UMass Boston

By Wei Ding and Nurit Haspel
Data gathered and analyzed by Wei Ding, Nurit Haspel and Betty O’Neil.

Maybe you’ve been there. You walk into a computer science class, or any kind of science class, with a typical size of 20-40 students and see maybe 2-3 women. At best. Why is that? Has it always been like that?

Apparent not. During the 1980s computer science was one of the most gender balanced areas in science, but the population has shifted drastically since then. Surveys show that while women out-graduate men in nearly all non-engineering areas, including life sciences, there is a steady decline in the percentage of women in computer science and engineering, from approximately 20% in the early 2000s to approximately 12% in 2007.* The proportion of women among Masters and PhD seekers, as well as among faculty is slightly higher, about 20%, but today’s undergraduates are tomorrow’s graduate students and faculty members. Will those numbers decrease even further in the future? And if there are so many talented, ambitious women out there, why do so few of them choose to pursue a career in science and engineering? A lot of explanations have been suggested and many of them make sense: the image of the average computer scientist as a geek guy who still lives in his parents’ basement, memorizes star trek and has zero social life drives women out of the field. In many cases, it adds to the lack of family support and fear instilled early on by misconceptions that technology is not for women, or social standards such as the push to get married and have children and not focus on advanced studies.

The Women-in-Science Club at UMass Boston was recently established by the three female faculty members in the computer science department: Wei Ding, Nurit Haspel and Betty O’Neil, and the club is led by three female graduate students Weiwei Gong, Jue Wang, and Shilpa Ghadge. The club is not limited to computer science majors and is open to female students from all disciplines of science, as it appears that the need for mentorship is common among all scientific fields. Linda Huang, an associate professor in the biology department says that over the years many female students have approached her for advice and looked to her as a role model. She adds that many students want to pursue an academic career but fear they may not be able to juggle study with a family life and other obligations. As minorities in a male-dominated discipline, female students need personalized advice and role models to follow.

While trying to gather some statistics about the percentage of women among computer science undergraduates, we found that in entry level courses 13% of the students are female, quite close to the national average. However, in the upper division courses the numbers drop to a startling 6.85% and it is not uncommon for a junior or a senior level class to have no female students at all. We feel that the lack of a supportive environment and the small number of female role models may drive women out of computer science and cause many of them to drop out or change majors. We want to track these students before they reach the point of no-return in their choice to drop out and try to improve retention among this student population.
The Women-In-Science Club aims to provide this critical support that so many students lack. We organize meetings where students can make new friends, reconnect with old ones and get useful advice from senior students and faculty members who have gone through the same process and faced the exact same issues. Among our planned activities are field trips to research labs in the Boston area, inviting speakers from UMass Boston and other institutes to generate panel discussions and workshops to address a number of issues many of us face: work-life balance, juggling a career and a family life, navigating the not-always friendly job market and being a part of a dual-career couple. While many of these issues are common to students of both genders, they weigh more heavily on women due to the social expectations placed on them to be the main care givers in their families.

We also plan to organize programming improvement workshops and create research opportunities for undergraduates in order to attract female students to the many opportunities available to students in the science and engineering fields. In a preliminary survey among our students we realized that most of them are interested in pursuing an academic career and could benefit from guidance and mentorship about work-life balance and preparation for the job market.

Only a few students indicated that their families were not supportive of their choice to pursue a career in computing. In our opinion, it shows that family support is a very important factor in the career choice of the survey participants. There is no easy way to verify it, though, since potential students who lack support in their home and family environments are less likely to pursue a scientific career to begin with.