Leveraging Targeted Conferences to Grow our CS Workforce

The U.S. faces a critical shortage of computer scientists and a growing gender gap in the field. To combat this shortage and gender gap, The Grace Hopper Celebration of Women in Computing (GHC) is an annual conference designed to retain women within the computing field. Since its inception in 1994, GHC has had a tremendous positive impact on thousands of women, including hundreds of students. Yet most of the reported success of GHC has been in retaining women who have already entered the field of CS.

Our recent study (“Using Targeted Conferences to Recruit Women to Computer Science” by Christine Alvarado and Eugene Judson, to appear in Communications of the ACM) builds on previous results to show that the Grace Hopper Celebration can actually increase the number of women who choose to study CS. We surveyed and tracked students over 5 years of trips of first year students to GHC. Our study showed that undeclared first-year women at Harvey Mudd College who attended GHC:

- Were more likely to declare a CS major: 32% of those who attended GHC declared CS as their major, compared to 10% of those who did not,
- Were more likely to take another CS course: 52% of those who attended GHC take another CS course during their time at HMC, vs. 31% of those who did not,
- Reported a better understanding of the field and the culture of CS

compared to first-year women who did not attend. These results were even stronger for women who showed some interest in majoring in CS before the conference, even when it was one of several majors that they were interested in.

Since the HMC program to send first-year women to GHC began, the percentage of women CS majors at HMC has risen from 12% historically to approximately 40%, where it has remained steady over the last 6 years.

Based on our experience and our study, we view first-year undergraduate trips to the GHC—and the potentially equally impactful GHC Regional Celebrations—to be a quick, simple intervention with a lasting return. To maximize the potential for impact, we offer the following guidance to those wishing to get involved, either by taking students or by funding the efforts of those who wish to take students:

- Funding: Cost per student to attend the national GHC is usually a little over $1000. While there are numerous student scholarships for GHC, unfortunately almost all require demonstrated commitment and several years of experience in the major. Thus, funding for regional conferences (which fund all student attendees) and directly to schools is critical to supporting students who have not yet settled on a CS major.
- Selecting students: When spaces and funding are limited, focus on recruiting students who express interest in CS among other potential majors. For the widest practical reach, recruit from early CS courses, particularly CS0-style and other courses aimed at students with no CS experience.
- Leveraging Regional Conferences: Dozens of regional celebrations have been established throughout the country (http://www.ghregionalconsortium.org). When taking students to the national GHC is not feasible, consider attending these regional celebrations (or starting one if none exists).