Justine Sherry – Personal Statement

My path to computer science and research was influenced heavily by a number of mentors, advisors, and role models. I came to college intending to major in international studies, but my roommate Laura convinced me to try a programming class my freshman year. Thanks to Laura's advice, I knew I wanted to be a computer scientist within a few weeks of starting the class. Later, my research mentor, a graduate student named Ethan, introduced me to networking, pushed me to publish my research, and inspired me to apply to graduate school. Today, I am in graduate school pursuing my PhD in computer science, and I feel tremendously lucky that I get to study networking. I am amazed that the Internet enables new industries, empowers individuals to publish to a global audience, provides instant access to information, and allows communication between any two individuals in the world. There are many fascinating challenges in ensuring the Internet's success into the future, from making the Internet truly reliable and secure, to designing a way for the network to grow to support new features. As I enjoy my opportunity to help this incredible system evolve, I often reflect on Laura and Ethan. Without Laura, Ethan, and others like them, I almost certainly would not have developed my fascination with and passion for networking research. Following their example, I try to share the world of computer science with others by mentoring, teaching, and volunteering in my academic community.

It is particularly exciting to share technology with those who have the least experience with it. Like Laura, I enjoy bringing newcomers to the field. At last year's College of Engineering Open House at the University of Washington, I designed my own activity to illustrate my research to a group of 7th grade girls. Together, we issued traceroutes to the homepages of a handful of newspapers around the world, and inspected the domain names of routers in the traceroute path to identify the cities our packets traveled through en route to their destinations. We then drew lines on a map, showing the Internet path across the world traveled by our packets. The girls quickly kicked me off the keyboard to issue the traceroutes themselves, querying me for help only in identifying city names ('Do you think PAR stands for Paris?'). I hope this experience helped them better understand the technology they use to access Google and MySpace, and that it might have inspired them to consider computer science and other technical fields in their futures.

As a teaching assistant, I participated directly in helping younger students choose technical fields as a career. I taught two levels of introductory programming at the University of Washington from 2006 to 2009. During this time, I took students from writing their very first programs, to developing an ability to solve problems with code, to discussing challenges in computer science and the opportunity to major in a technical field. Several of my students chose computer science as a major, and countless others chose related fields such as digital art and informatics. While I may not have played a primary role in this decision for all of my students, I am proud to have provided direct guidance to some. Recently, one of my former introductory students emailed me after completing his degrees in computer science and applied mathematics, asking me for advice on applying to graduate school to study algorithms. I am honored that years after serving as his teacher, he still considers me a source of advice in his technical career.

Sunil Garg 11/9/10 9:30 PM

Comment [1]: Give this sentence some impact (ie. Why does it matter to you?).

I have not just focused on inviting newcomers to computer science. Like Ethan, I want to help students engaged in computer science find their place within the community. I have targeted two issues that impacted me personally as an undergraduate: encouraging undergraduate research

and expanding the presence of women in computer science. As Vice-Chair of my ACM student chapter, I revitalized the computer science department's quarterly 'research night'. Participating in research can seem like an unapproachable endeavor to many students, especially because the first step is to meet with multiple researchers to find the right project, which can be both intimidating and time-intensive. Research Night brought together undergraduates, graduates, and faculty for a large poster session aimed at introducing undergraduates to opportunities to do research. My efforts more than quadrupled participation in research night, and as a result, enrollment in undergraduate research increased within our department.

The next year, I was elected chair of my student chapter of ACM-W. In this office, I scheduled bi-weekly lunches for undergraduate women to gather and discuss their experiences in computer science. Because each week centered on a theme, I was able to encourage participation in outreach, internships, and research among the women who attended. More importantly, I connected individually with many younger women. I took them out to coffee, discussed their futures, and connected them to contacts in industry and academia who could help them pursue their interests, from research in computer graphics to web design in industry. I am especially proud of one of these younger women who ultimately came to work in my research group. I, along with Ethan, mentored her throughout the school year, and she is a co-author on our most recent publication. Even after leaving for graduate school, I continue to develop these relationships, as I believe that one step towards solving the 'leaky pipeline' of women in academic computer science is through one-on-one mentoring like I received from Ethan.

Since starting at UC Berkeley only two and a half months ago, I continue to contribute to my community and share my passion for computer science and networking. This semester, I attended a variety of mentoring events aimed at engaging undergraduates in research, and have met individually over coffee with two undergraduate women to help them identify a direction in which to pursue their interests. Within my research lab, I volunteered to help lead a weekly reading group for students and faculty interested in networking. I am looking forward to a teaching assistantship for undergraduate networking next year.

I believe that my leadership and mentoring experiences combined with my research experience uniquely positions me to support and inspire others to understand and pursue technology. My plans for service, discussed above, and for research, discussed in my attached proposal, mean that graduate school will only refine my leadership skills and strengthen my technical impact. An NSF graduate fellowship would enable me to focus on these efforts freely while in graduate school. After completing my PhD, I intend to pursue research as a professor of computer science, and am committed to continuing my service to students, my research community, and society in this role. Thank you for your consideration.