**STATEMENT OF PURPOSE**

# Primary interest of study

# My research projects at Stanford, my interest in HCI, and my subsequent employment in Google are motivated by an passion for inclusion – turning a critical eye towards design processes and artifacts to understand how they privilege certain kinds of people and generating more inclusive design possibilities. While I realize that PhD work will spark new connections and questions, several questions I would currently like to research include:

*How can ready-to-market ubiquitous computing, such as cell phones, vastly improve living conditions across “the digital divide”?* In 2002, I worked with Reuters Digital Vision Fellow Raj Pingali and a team of fellow students to design and build software for medical caregivers in Hyderabad, India.

Equipped with a laptop running our software and a motorbike, the caregivers acted as liaisons, traveling from Hyderabad to surrounding villages, collecting diagnostic information from villagers with seeking health advice but without means to visit hospitals themselves. Shortly into the pilot of the Medic human-computer system, the laptop running our software was stolen, stalling the project.

While a laptop was our best option in 2002, our project required less computing power, improved network capabilities, less theft appeal, and greater affordability. Cell phones are emerging as just such a device. I am interested in researching the design of appropriate technologies – the needs of users and their context, the development of architectures that can succeed in those ecosystems, the impact of such technologies on development.

*How do emotional responses to computing impact the inclusiveness of user experiences?* While conducting early stage user research for a project at Google, my participant’s reaction to our proposed information-sharing concept made me realize the importance of this question. Paula, a 58-year old nurse, “This sounds like one of those things my son will try to tell me is easy. But I probably won’t get it.” Instantly, I thought of my mother who, once a PL/1 programmer, has now written off computers as a quagmire to be avoided so thoroughly that she unplugs the machine from the wall rather than learn to shut it down.

It is not enough for software to be easy to use by those brave enough to experiment with a new product. The tools must speak to a users coming to a new computing relationship with the baggage of previously abusive encounters. Other users come with the constant and subtle socialization that tells girls that computers are difficult or that meaningful computer activities are that which they do not do. Jodi Forlizzi’s work in building a theory of experience directly relates to my work designing information tools at Google, creating computing experiences equally challenging and empowering to girls and boys, and understanding the role of tools designed by largely male, Western minds to have an impact in another country.

# Objective in pursuing a PhD at CMU

# My primary objective in pursuing a PhD is to think deeply about the human-computer interactions I design – the underlying needs, the context, the options, and the implications. While my work at Google can have great impact, I find that practicing UI design in industry subjects me to expectations of designing the best thing I can in three weeks as a reaction to Yahoo! or tempering a user-centered design with respect to current engineering resource availability.

I am passionate about building ideas with others – through teaching and collaborating. Interested minds motivate my research and the act of explaining forces me to deepen my thinking so that I may generate many ways of building intuition about a concept. It is the experience of a PhD program that is my primary objective. My secondary objective is to become a professor or researcher applying my expertise in computing with a long view towards improving human lives.

I would like to work towards greater understanding and better interventions at Carnegie Mellon HCII. I am eager for the opportunity to collaborate with faculty representing expertise as diverse as my passions for fields including Computer Science, Organizational Behavior, Product Design, and Media Studies. CMU is one of few programs that recognize the importance of these interdisciplinary lenses in understanding social-technological systems.

# III. Preparation –

My undergraduate honors thesis in Science, Technology, and Society, a study investigating factors influencing women’s attrition from the Computer Science major at Stanford University, is the work which confirmed my passion for the research process. I first grew interested in this topic through reflection on my own experience as a minority in Computer Science. I was moved to designing a study after finding literature lacking in answers to questions I faced in creating programming for Stanford’s Women in Computer Science organization. I chose qualitative methods to generate insights in combination with quantitative methods to test them, following a cohort of introductory CS students through the first four courses of the CS curriculum. Having no advisor experienced in my chosen methods and subject, I enlisted the help of researchers in education, computer science education, sociology of gender, and organizational behavior in lighting my path. I learned how to conduct ethnographic inquiries, design surveys, and apply statistical tests of correlation and validity. Surveying literature in several disciplines, I found several sociological theories to be particularly relevant frameworks for my subjects’ stories. I presented my account of CS students’ embattled self-confidence with some anxiety to the department lecturers who meet these students every quarter and found, to my relief, that the account had resonance. I have since published these findings at the 2004 SIGCSE conference and was invited to be on a panel that has been accepted for the 2005 SIGCSE conference. It was biking back from our 24-hour computer lab at 5 am, exhausted and stressed writing the final chapters, that I realized that this project had been my most satisfying intellectual undertaking in school.

In addition to conducting independent, interdisciplinary research for my thesis, I have also conducted research projects in doctoral seminars. In Professor Stephen Barley’s ethnography seminar in Work, Technology, and Organizations, I worked with a team of students studying the impact of hoteling workspaces on engineers in a Bay Area corporation. We presented our account of the disconnect between social functions of place at work and the functional requirements of space for engineers at the 2002 Informs Conference on Information Systems and Technology.

I have also deepened my thinking about and passion for design by teaching. In addition to teaching many sections and office hours of introductory data structures and abstractions, I have also been a TA for a 20-student design studio course where I worked with students in small groups providing design critiques and teaching them about tools to stimulate their generative thinking. I have also delivered a lecture on algorithms to a 150-student introductory CS course and have prepared a lecture connecting concepts in workplace organizational behavior to workspace design at Google for my classmates in the 2003 Mayfield Fellows program.

**Industry**

As a User Interface Designer at Google, I have strengthened my ability to negotiate order out of the chaos that is this adolescent company in the middle of a growth spurt. Most recently, I worked towards the launch of Google Advertising Professionals which, while not deep in HCI scope, involved over 40 cross-functional team members – all with design input. I have pressed for and have been successful in conducting early stage needfinding for a current project to facilitate information sharing online – educating product managers, designing protocols, and presenting findings compellingly.

These research and teaching experiences have helped me articulate my passion and strengthen my resolve to pursue a career in research and teaching.