Leesha Maliakal Shah *Diversity Statement*

I grew up with 3 sisters, and an immigrant father who was determined to prepare us as leaders in STEM. My family lived paycheck to paycheck most of my childhood and adult life. My mother worked 12-hour night shifts as an ICU nurse, my father shuffled between odd-end jobs, and we each started working in high school. Despite limited financial resources, our parents prioritized our education at a college preparatory all-girls school. When we filed for bankruptcy, I remember crying in the financial office, requesting that they point us to additional aid and scholarships. Growing up, I was surrounded by resilience in the face of adversity.

Entering undergrad, I faced a cut-throat climate of highly competitive engineers at an R1 institution. Feeling isolated as the only woman in most of my CS courses, I struggled to keep up with my learning. I internalized a mindset of "I can't ask for help if I don't know what I'm talking about, so I need to keep working on my own, and work harder until I get it right." I hadn't yet figured out how to leverage the resources around me to learn effectively.

I overcame this adversity by developing *regulation skills* (cognitive, motivational, emotional, metacognitive, and strategic behaviors for achieving a goal) through the Design, Technology, Research (DTR) community. Curious about how the DTR community could so effectively and scalably support the development of myself and my peers, I pursued a Ph.D. to explore how to design and implement these learning environments for more students.

As an educator and design-researcher of HCI learning environments, I find it imperative to implement the values of diversity, equity, and inclusion in my approach. Today, I train students in the regulation skills required to overcome adversity, implement scalable models that expand opportunities to practice these skills, and actively recruit and support underrepresented students into these communities. Below, I detail how I practice these values in my research, teaching, and service.

Fostering Diversity through Research and Teaching

Underrepresented students face tremendous adversity in educational settings, a reality that often continues as they enter the professional world. **I explicitly train students in the metacognitive and emotional skills necessary for overcoming adversity.** Through my research studio models and advising approach, I scaffold students to develop metacognitive skills, like how to strategically *plan* out their work, *seek help* from resources in the community, and *reflect* on and improve their process. Further, I implement introductory HCI courses that challenge students to engage with design sensibilities, or the mindsets experts practice to emotionally regulate through the design process. For instance, I coach students to practice *radical empathy* when conducting needfinding with user classes that are different to them, or *patience* when their first user test inevitably fails. While these metacognitive and emotional skills are valuable for any aspiring design-researcher, they are *essential* for underrepresented students who face additional barriers to achieve similar outcomes as their peers.

Access to supportive learning opportunities is often limited by the practical challenges of orchestrating these environments at scale. **To expand available opportunities for students, I design and research how to scale effective HCI training when mentoring resources are limited**. For example, in my dissertation work, I implement

socio-technical learning ecosystems that scale effective undergraduate research training. Since Fall 2015, I have used my approach to personally advise 16 students in independent research through the Design, Technology, and Research (DTR) program at Northwestern University. Cumulatively, the DTR program has trained 109 students in independent research, opportunities that are typically reserved for Ph.D. students or stellar undergraduates. To further scale access to effective HCI design-research training, I have helped 10+ faculty across the country adopt our studio model, and adapted aspects of our model to scale studio training for 120+ students enrolled in the introductory HCI course at Northwestern.

To ensure that these expanded opportunities reach our underrepresented student populations, I actively recruit and support these students in our communities. As chair of the DTR Interview Committee, I worked with students to reach out to and recruit from student groups like National Society of Black Engineers, and Women in Computing. Of the 16 students I have advised, 18.8% identify as BIPOC and 62.5% as female. Of the 109 students DTR has trained, 6.6% identify as BIPOC and 41.7% female. I also seek out opportunities to inspire undergraduate women to pursue academic careers in Computer Science. For instance, I organize quarterly brunches with female DTR students, where they can chat with me about academic career paths in a casual setting. I am also frequently invited to Women in Computing events at Northwestern to speak with students about my experiences as a female Ph.D. student in CS. As I move forward in my career, I aspire to create settings where female graduate students and faculty members can connect and exchange resources for navigating motherhood in academia.

Fostering Diversity in Non-profit Educational Settings

Beyond academia, I have volunteered my HCI expertise to support non-profit educational settings within my local community. I designed and implemented a coding curriculum as part of BraveCamps, a week-long design camp for middle and high school girls in Chicago. We actively recruited girls from schools in poorer socio-economic areas of Chicago, and coached them to identify a problem in their local community as their project focus for the week. Within a week, our students went from virtually no coding experience, to publishing websites that shed light on issues like police brutality, food insecurity in schools, and access to free extracurricular programming in the city. Through the program, I taught my coding curriculum to 10+ camps, reaching 100+ young women. My curriculum was later adopted to train a team of coding coaches. Cumulatively, my work led to a total of 25 camps, reaching 700+ girls in 8 cities across the country. Several young women from the program camp have reached out to me afterward, saying the experience inspired them to pursue a career in technology.

I chose to become an HCI researcher and educator because I was fortunate enough to find myself in communities that didn't just support me as a student. They supported me as a whole person. The metacognitive and emotional regulation skills that I have practiced as part of these communities are what propelled me forward in the face of adversity. It is my personal mission to research and implement learning environments that are *communities of support*, where we as HCI educators foster the skills students need to grow into the next iteration of themselves.