Ryan Louie *Diversity, Equity, Inclusion Statement*

I've been fortunate enough throughout my educational career to have opportunities to collaborate with classmates and colleagues who come from diverse identity backgrounds. At the end of 5th grade, I decided to leave my predominantly white/asian, middle class neighborhood in California to attend the only STEM magnet middle school in my school district. Through this, I became friends with many classmates from racially and socioeconomically diverse backgrounds, who similarly chose to take a leap of faith by leaving their default neighborhood schools to pursue a desire to learn STEM in a hands-on environment. Later in my education career, after graduating high-school, I pursued college STEM and Electronics classes at community-college, where I befriended many classmates from Latino backgrounds and who took non-traditional educational pathways, such as those who previously came from trade school backgrounds, veterans, and 50+ year old students who were attending college to pivot their careers. After one year, I pursued my 4-year undergraduate degree at Olin College, a small engineering undergraduate college with a student body with 50% women, a highly unusual statistic for undergraduate engineering programs. Through the 20+ team projects I participated in during my time at Olin College, I had the opportunity to experience the benefits of collaborating with brilliant and visionary women engineers, as well as the challenges of fostering teams and communities which were inclusive. Finally, during a summer 2017 research experience co-designing Assistive Technologies for the Blind and Visually Impaired (BVI), I had chance to work with fellow student researchers who were BVI themselves, which gave me a valuable experience in how to be more mindful and inclusive about collaborative interactions on mixed-ability teams. **My personal educational experiences inspire me to foster learning environments that are diverse and inclusive; and where people of diverse backgrounds can acknowledge and celebrate differences while also finding unity through the pursuit of advancing shared values.**

Experiences in Broadening Participation from Undergraduates in Human-Centered Computing Research

During graduate school, I took steps to promote diversity and inclusion through my mentoring and service in Design, Technology, Research (DTR), a research program and learning community that provide many undergraduates the unique opportunity to **learn to lead independent research in computer science and design, which is an opportunity that are typically reserved for Ph.D. students or a few stellar undergraduates.** Since Fall 2017, I have personally mentored 25 students on learning to do independent research, while the DTR program has cumulatively provided this learning opportunity to 125+ students. Of the 25 students I've mentored, 13 were women, 1 was Black, 20 were Asian, and 6 were international students. Of the 6 students who had the opportunity to publish and present their work at premier HCI conferences, 4 were women.

Women, LGBTQ+, and BIPOC students' often face adversities that challenge their ability and motivation to persist in STEM and computing educational pathways. **As one approach to addressing these challenges, I intentionally create learning spaces where students can grow the emotional and regulation skills necessary to build self-confidence and to overcome adversity.** Students that I mentor set metacognitive goals for the quarter, and during mid quarter and end of quarter meetings, we discuss how they navigate emotional and metacognitive adversities that arise in the process of work. For example, some of my students who identify as women and international students have shared how they can struggle to speak up for themselves and their ideas. I help them reflect on why that might be a struggle for them, and during meetings, call on them to share their thoughts when I notice they are having a hard time interjecting into the conversation.

To support underrepresented student populations in accessing these unique, undergraduate research opportunities, I actively recruit and advocate for these students when they apply and interview to join DTR. As one of my service roles in the DTR learning community, I served as an organizer of our open house event where I was responsible for outreach to students interested in DTR. To recruit diverse students, I partnered with leaders of minority-serving organizations at Northwestern to spread the word, such as Women in Computing, National Society of Black Engineers, and Society of Hispanic Professional Engineers. Additionally, through my leadership roles in DTR Open House, TA for *Intro HCI classes,* and President of the Northwestern Table Tennis Club, I am able to form personal relationships with undergraduate students, several of whom come from diverse backgrounds. Through these interactions, I have personally talked to women students in CS to overcome their hesitations of applying to DTR that come from a fear of not possessing enough knowledge or experience (e.g., not being technically proficient

due to joining the CS major later than their peers). For example, one such student that I encouraged to apply became a student that I mentored for 5 quarters in DTR, and we co-published a paper at the CSCW ’21 posters session.

During the interview process for joining DTR, I advocate for candidates from underrepresented or nontraditional educational backgrounds. During interviews panel debriefings, I aimed to highlight candidates' areas of strength and growth, and how their involvement in DTR would help them develop their skills. For example, I personally encouraged some women students to apply to DTR, despite them feeling they were less qualified technically due to joining the CS major later than their peers. During interview committee review meetings, I highlighted these candidates' holistic strengths despite their nontraditional education pathway, and emphasized that these students could begin contributing to projects through their strengths, for example, in design, in methodically directing project plans—but also be given a valuable opportunity to grow in areas in which they had less confidence and experience.

Future Plans for DEI through Teaching and Mentorship: Programs for Diverse Undergraduate Students to engage in Independent Research

As a future assistant professor, I plan to continue my commitment to provide opportunities to students from diverse backgrounds to lead independent, complex research projects. Building on the success of my mentorship in graduate school, I will lead a research studio composed of undergraduate and graduate students in which all are pursuing independent research projects in HCI and related topics. I can use existing programs through the Undergraduate Research Office to help students from diverse backgrounds to get additional support to pursue these opportunities, through undergraduate research fellowships and grants that will provide funding and additional professional programming. My past outreach efforts for undergraduate research included contacting leaders of campus-organizations that promote the participation of underrepresented students. As a future faculty, I will make recruitment more relational by partnering with such organizations to organize undergraduate student research panels. Here, students from the research studio can share how they have grown and what they have accomplished in independent research, and encourage others to join our research studio.

Future Plans for DEI through Research: Partnering with Organizations to Empower Under Resourced Community Members’ Creative, Relational, and Communication Capacities

In my future research developing AI-enabled applications that empower people, I will broaden the impact of these applications by designing and testing them in partnership with organizations that serve people from underrepresented backgrounds and under-resourced communities. I am inspired to do this based on my previous undergraduate research experiences with Paul Ruvolo at Olin College, who facilitated long-term partnership with educators at Perkins School of the Blind for the goal of co-designing assistive technologies for orientation and mobility training. For example, in my proposed research on AI-mediated peer social support, I will establish partnerships with campus organizations like Counseling and Psychological Services (CAPS) to understand and support the needs of “Peer Academic Success Coaches” who are helping students from minority-based backgrounds. In my partnership with people connected to these organizations, I will take a design justice based approach to ensure people from diverse backgrounds are receiving support that is sensitive to their background or unique needs. Specifically, I will conduct needfinding studies and literature reviews to understand how people from diverse backgrounds may be particularly impacted by ineffective strategies (e.g., a help provider from a privileged background accidentally providing unsolicited advice that does not apply and further marginalizes a help seeker’s lived experiences). This can inform creating AI-assistance that can suggest best practices to ensure the peer support that is provided is equitable and inclusive to help seekers from diverse identity backgrounds and personal experiences.