Diversity Statement

As a young girl, I was a natural-born sleuth. I read Sherlock Holmes with a fanatical zeal outmatched only by my zest for finding clues in the most innocuous of places. Nothing went unnoticed. Were those motes of dust scattered in the corner clues to some villainous plot? Did a small stain on my younger brother's shirt mean it was *he* doing the plotting? I was driven as a child by my surroundings, always taking a scientific interest in new parts of my environment. As I grew older though, the world around me began to fade. When I was seven, my parents sensed something was amiss and took me to the doctor, where I was diagnosed with a form of macular degeneration and cone-rod dystrophy. I was told that I was going to lose my sight as time wore on.

This diagnosis was scary, and going to school made it no less so. My classmates would sometimes make fun of me, first for my large glasses, and then for the cane I needed to get around. Even teachers would sometimes restrict the types of classes I could take. I was placed into special education, which meant it was harder for me to nourish my intense love of science, investigation, and study. I was denied admission to advanced classes because my capabilities were cast into doubt by my condition. No matter what crowd I stood in, I stuck out. Even within the blind community, I was discouraged from becoming a scientist. *It's too impractical*, many would say. I was able to push past that stigma, but I acknowledge that many blind individuals do not have the same privileges I have had.

While my playful sleuthing days may have come to an end, I have shifted my focus to a different mystery to solve: the low rate of individuals with disabilities and other individuals with diverse backgrounds pursuing careers in science. There are many visually impaired and disabled people who dream of becoming scientists and academics but, for many reasons, fear it is impossible. One such reason is a lack of confidence, stemming from the preconceived notions from within and from other. Foremost, I want to foster confidence in those with visual impairments and other disabilities. I strongly believe that anyone, no matter their age, background, or ability, can be a confident contributor to science and society. Part of the mystery I want to solve is how I can help lead the way to more diversity in science.

My first day teaching at *Empowerment Through Integration* in Beirut, Lebanon.

To put my conviction into action, I volunteer as the STEM curriculum advisor for an organization called *Empowerment Through Integration*, or ETI. ETI is a non-profit that brings visually impaired and sighted children to a camp where they play, learn, and grow—together. Over the previous two summers, I created ten blind-accessible science experiments and taught them at ETI's camp in Lebanon. I am honored to contribute to ETI's mission to help blind children understand that they add value to the world and help sighted children see the positive qualities that lie beyond the stigma of blindness.

Here at home, I do my best to help aspiring scientists who are blind and visually impaired build all the tools they need to be successful. On my website, I have curated a comprehensive list of strategies, resources, and software that I have used throughout my academic career (www.monaminkara.com/blind-scientist-tools). These tools are something that I feel very strongly about sharing, and I often discuss and promote them at seminars and presentations. I understand that students have their own ways of approaching education, so I offer up my tools simply as a

reference for strategies that have worked best for me. For example, I have a section titled "Advice for Disabilities Services," which was inspired by my experience going through the graduate school selection process. Many places did not know how to address my needs at their institution.

Additionally, I travel so that I can speak to current students about what it means to be a blind scientist. In 2017, I was invited to the Universidad Iberoamericana in Mexico City to speak to blind children from the area who were interested in pursuing science. In 2018, I was invited to Berkeley to give a talk at a seminar called "Is a Ph.D. For Me?." This seminar was given to aspiring graduate students with disabilities. Here at the University of Minnesota, I shared my journey with numerous student groups, from the *Muslim Student Assiciation* to *Women in Science* and Engineering. I like to speak about my experiences to a diverse crowd because I believe dialogue between different worldviews is crucial within a pluralistic campus environment. Finally, I serve on the *Chemists with Disabilities Committee* at ACS so that I can contribute to the discussion about advancing chemists with disabilities and making chemistry accessible to all.

Chemists with Disabilities Committee at the 255th ACS Convention in New Orleans.

I strongly believe that the unique perspectives of the visually impaired can lead them to innovate within any scientific field. My perspective has certainly helped me. In my graduate work, I studied the protein *Helicobacter pylori* urease. While my sighted peers looked at pictures and videos of the molecule in action, I, being blind, didn't have any option but to get my data another way. I tracked the movement of amino acid chains using a root-mean-squared fluctuation method. Taking these routes meant I was untethered from visual data. In the end, I discovered something my sighted peers had missed: a horseshoe-shaped distribution of amino acids that could shuttle urea molecules right into the active site of the protein. This is when I demonstrated that I—like those with sight—had a full, albeit different, perception of the facts.

I support the push for diversity at Northeastern University, I believe that with my visible position as a blind professor and my commitment to outreach, emphasis, and inspiration, I can help continue to move the climate on campus toward one of accessibility and diversity. Northeastern's multi-tiered approach to encouraging diversity is a mission I will be happy to contribute to, and I hope that we can discuss in detail how I can help advance Northeastern's goals. As a professor, I will make sure that every student feels heard. I will highlight the achievements of scientists with diverse backgrounds to uplift my own students. I will endeavor to give a voice to all whose stories remain untold. I will add my voice and my students' voices to the community. If you hire me, you would not only be investing in an individual but in an idea—the idea that our circumstances do not equal our limitations; the idea that scientific progress is built on diversity of thought. Every young sleuth has potential to become a part of the next generation of scientists and researchers, and I want to make sure that unfair limitations and expectations don't keep them away. If I could go back and speak to that curious and excitable young girl, I would tell her that scientific vision is more—so much more—than sight.