

APPENDIX 1 – AUTHOR POSITIONALITY STATEMENTS

CM1: I grabbed a 34,500 volt overhead power line I was working on as an electrician in December of 1983 that resulted in having both of my arms amputated above the elbow. I have been using cable powered prostheses for most of that time. I used the Utah Arms with myoelectric elbows for a couple of years at the beginning of my life as an amputee. I quit using them because of the weight, having to charge the batteries every night and if they broke down, there was no one around to fix them, so I had to send them 400 miles to Salt Lake to get them repaired.

The terminal devices I use on both 3-position wrists units are Titanium hooks. I wear these arms 16 hours a day, seven days a week. I do not use them when I shave, shower or swim. I can cook, drive, ride a bike, use a computer and can complete most ADL's by myself.

I use a dressing stand to help with getting the arms off and on by myself and for dressing. By having this stand, I am able to completely live independently.

I retired from the work force in 2025.

I am involved in an amputee non-profit organization called Enhancing Skills For Life (ESFL), where I have served on the planning committee since 2004. You must have, as a minimum, an upper bilateral limb difference to be a part of this group. I enjoy being a part of this group as I get to spend time with other limb difference people to teach and to learn.

CM2: I am a 73 year-old white male. At age 17 I had a bilateral amputation as a result of high voltage Electrical burns.

Emergency burn care at Brooke Army Medical hospital saved my life. At the University of Miami I had reconstructive surgery, occupational therapy, and physical therapy. I began learning how to use prosthetic arms for activities of daily living. I will always be grateful for vital support from family and friends.

Vocational rehabilitation and Veterans Administration assisted with education. I received my Social Work degree in 1977. I retired after a successful career in rehabilitation, medical social work, crisis intervention, hospital quality assurance, and staff development.

My wife and I met in college and we were married for 30 years. She was a family therapist in private practice.

I've received care from multiple prosthetic teams that made my prosthetics more functional and comfortable. There were many improvements in design and new materials including liners, leather, pelite, proflex, silicone; frames fiberglass, acrylic, polypropylene, carbon; Elbows e400 and ergoplus, multiple wrists and hands. I have been using carbon frames with silicone liners for more than 25 years.

Currently my prosthetics are a hybrid combination of body-power and electric.

The left arm has fiber cable, ERGO elbow, three function wrist and hook.

My right arm has Quick disconnect wrists that work with a hook or hand. I can control the electronic hand with a shoulder strap connected to a linear transducer. The right elbow manual locks with an elastic chest strap.

For comfort I take my arms on and off several times but can wear my arms all day if needed.

My favorite activities are adaptive design, cooking, swimming, and sailing.

CM3: I am a 78-year-old woman and have lived with an above-elbow amputation for 31 years following an injury. I am a widow and live alone in the country, which can make some daily tasks and getting healthcare more complicated. I am active in the amputee community, particularly through online groups and peer support. I have tried body-powered prosthetics twice in the past, but they didn't provide a benefit for me. Recently, I have developed overuse problems in the shoulder of my good arm, so I am looking into options that might help me.

CM4: Six years ago, sepsis completely changed my life, resulting in the amputation of portions of all four of my limbs. Today, at 46, I live in the Midwest with my husband and two children, fully engaged in both my family life and my career that consists of completing handwritten paperwork for an insurance company. My daily independence is powered by an array of prosthetic technology: an AFO brace with a toe filler, a below-knee prosthesis, a myoelectric arm equipped with an ETD2, and mechanical thumb and pointer fingers. Navigating this journey successfully requires exceptional care, which I receive from a local, family-owned prosthetist. Thanks to this vital partnership and modern assistive technology, I have successfully resumed a life of extensive worldwide travel with my family. I rely entirely on my lower prosthetics to stay mobile—completely bypassing a wheelchair while traveling—and dynamically adapt my upper-limb prosthetics based on our specific activities and the local climate.

CM5: I am a 62-year-old man. I still work and live alone. I have become a quadruple amputee - both legs below the knee, right arm below the elbow, and partial left fingers - following a severe case of COVID in 2021. I use prosthetic legs every day, most of the time, but a myoelectric arm mainly when I go out. I have been fortunate to benefit from good health insurance and, also, to be able to pay for some homecare.

CM6: I am a 27 year old female, above the elbow amputee due to trauma from a car accident when I was 21. I have used myoelectric and passive/cosmetic prosthetics for the past four years. My dominant arm (right arm) was amputated so I used my myoelectric prosthetic more consistently for the first two years. I've been using my cosmetic prosthetic occasionally for the last two years. I was born in Colombia and moved to the United States when I was five. I use a nationwide clinic based in the US for my myoelectric prosthetics and a specialized prosthetic clinic based out of Medellin, Colombia for my cosmetic prosthetics. I have a Bachelor's degree in marketing and a

Master's degree in Business Administration. I'm an entrepreneur and own two Colombian restaurants, one in South Carolina and the other in Georgia.

CM7: I am a 38 year old Latina woman with a congenital limb difference. I tried using rudimentary prosthetics at the age of 5, but found them heavy, uncomfortable, and unhelpful. Cost and insurance also played a role in not pursuing prosthetics further. Since that time I have learned to adapt my life activities without them fairly successfully. In my mid 30's I decided to try an upper limb prosthetic again for workout purposes, but found the physical pain of using the prosthetic was not worth the effort. Its design also didn't match my workout routine needs as I thought it would. I also am a federal reproductive health policy professional. My perspectives on prosthetic technology are based on my personal experiences and on my professional knowledge of inequities to healthcare access based on socioeconomic factors.

RP1: I am a 43-year-old cisgender white woman without limb loss or limb difference. I am clinically trained as a prosthetist-orthotist and am certified and licensed, however, I do not currently practice clinically. I teach at the University of Washington Master of Prosthetics and Orthotics program in Seattle, Washington. When I worked clinically, I provided prosthetic care to people across the age span and with both upper and lower limb loss or difference. I was raised in a very small, rural town in the U.S. and had never met a person with limb loss or difference until I was in my early twenties. I have a chronic health condition but do not consider myself disabled. I am a doctoral-level researcher with training in qualitative methodology, community-engagement, rehabilitation science, and global health.

RP2: I am a 35-year-old woman with congenital limb differences. I have used bilateral below-elbow myoelectric prostheses and bilateral partial foot prostheses since the age of 3. Until my early twenties, I used my upper limb prostheses for almost all activities throughout the day. I still use my prostheses every day but only in specific situations, as I have learned that some tasks are easier or less painful without them. My care was provided by the same prosthetist at a family-owned clinic for most of my life. I currently receive care from two different providers at a university clinic for my partial foot prostheses and a national clinic for my upper limb prostheses. I am also a doctoral-level researcher with expertise in quantitative research involving upper limb prostheses, including the assessment of biomechanical and functional outcomes. My perspectives on limb difference, prosthetic technology, and clinical care have been shaped by both my personal history and professional background in this area.

RP3: I am an academic researcher with training in electrical engineering and bioengineering. The overall goal of my research program is improving human functioning through innovation at the intersection of health, technology, and society. One focus of my current research is the development of novel prosthetic control systems. Over the past several years, through conversations with patients and community partners, I began to appreciate the vast gap between

the priorities of academic researchers and persons living with limb difference. I have observed this gap in other areas of my research as well, including for persons living with chronic pain. My current and future research priorities have shifted to more closely involve people living with chronic conditions, who I believe have deep expertise based on their lived experience, as equal partners in all phases of research and collaboratively co-designing solutions to the right problems. My perspective is also shaped by my own challenges of navigating a fragmented healthcare system to find appropriate high-quality services for family members living with disability. My perspective is also shaped by my intersectional identity as an immigrant in the US and experience navigating healthcare systems and social support systems in different countries and contexts.