

Thrust into becoming Head of the Household in 2019 when my mother's health deteriorated from her battle with an autoimmune disease and a work-related injury. I work 20 hours a week, commute five days a week to CPP on a six-hour round trip on public transportation, and take care of my mother. My determination to progress through the burdens that have fallen onto my shoulders had made me blind to my health issues until I was diagnosed with Keratoconus which has negatively impacted my educational and professional goals. Being awarded the 27th Annual Golden Torch Awards: Mike Shinn NSBE Distinguished Member will save my ability to see. Even when at my lowest, which brought me to depression, self-doubt, and contemplating my reason for living, I never gave up hope that I could become a Biomedical Engineer. Through this aid, I'll be able to finish up my educational endeavors.

It is thrilling to engage in discovering the unknown and develop strategies to efficiently use it to add value to society and people. As an engineer, I have fanatically worshiped developing the next disruption in patient-centered medical devices. When I took my first engineering computation class and built an Artificial Intelligence (A.I.) program to map the hemodynamic behavior of an artificial aortic valve, the inner kid in me jumped out throughout the entire process. Using the engineering process and innovation, I will improve patient outcomes, enhance patient experiences, implement agile/lean manufacturing principles, and reduce production costs to help meet the evolving needs of healthcare globally.

As a Black, low-income, single-parent household, first-generation American, and first-generation college student, I work to decentralize opportunities for underrepresented groups so they can access opportunities in Science, Technology, Engineering, and Mathematics (STEM). My passion for solving problems and technology has influenced my decision to specialize in biomedical engineering due to having loved ones suffering and dying from health issues. As an adaptable, ambitious, and competent student, I am motivated to participate in opportunities that hone my engineering skills and expand my knowledge. With an eagerness and curious mind, I always seek unconventional solutions to complex problems.

In five years, I envision myself as a Biomedical Engineering Ph.D. researching a non-invasive cornea transplant. My first concept is substituting the cornea with a biocompatible artificial cornea called the ACC-short for Artificial-Cornea-on-a-Chip. It will be a composite material of polydimethylsiloxane (silicone) and graphene. Most implants have a shelf life of ten years due to biofilm production deteriorating the biocompatibility of the implant and the host, which risks infections.

MDHome is a mobile diagnostic and monitoring system that allows users to access important information about their bodies whenever and wherever they want. Using biosensor technology and telemedicine, users can scan and monitor the body's physiological functions. After a few minutes of analyzing the results, you can upload the results to the application platform for your physician to review and provide feedback.

The LifeXtnder is an exoskeleton that a disabled individual or an injured person can wear and perform everyday activities. It would feature biologically inspired multi-functioning microsensors that detect, measure, analyze, and process temperature, proximity, touch, and pressure. The sensors will also contain built-in actuators for automatic calibration and sensitivity change. Specific portions of LifeXtnder (arm, hand, legs) could be 3D printed out for people with limited movement or missing limbs.

Besides doing research and development (R&D), I will establish a nonprofit that provides assistive technology resources for those suffering from rare diseases like Keratoconus, visual and physical impairments. Visible and invisible disabilities can negatively impact the quality of life for those who lack the resources to ensure a decent life. Assistive technologies allow people tools to gain functionality in society by solving a limitation unique to each person with a disability. Across America, a lack of coherent urban planning allows for a diverse landscape depending on which part of the country you reside. To integrate an underserved population into society, the barrier-free design includes people with visual, auditory, physical, and mental disabilities in the brainstorming of urban development to allow them equal enjoyment of public spaces those with disabilities enjoy. This new strategy will allow a new era of creativity when increasing access for the disabled to collaborate and build together.