**Describe an example of your leadership experience in which you have positively influenced others, helped resolve disputes, or contributed to group efforts over time. (A leadership role can mean more than just a title...)** *350 words*

Leadership found me before I had acquired the words to define it. As the eldest daughter in a home that buzzed with chaos and responsibility, I took on the role of mentor, teacher, mediator, confidante, and caretaker. I learned quickly that true leadership relied not on authority, but on consistency, confidence, and reliability. These early experiences laid the foundation for how I would lead in every chapter of my life.

The role of “big sister” followed me into my professional life, profoundly influencing my passion for teaching and mentorship. What began as early-morning math lessons with my brother at the kitchen table evolved into tutoring underserved youth and, now, educating young scientists and medical students. While the content has changed, the heart of mentorship remains the same, and I draw daily on the instincts and patience I first cultivated with my siblings.

I also came to understand early on that leadership is not a solo act. At home, I wasn’t leading alone; I was part of a family where cooperation and compromise were essential. That same interdependence drew me to team sports—soccer, basketball, softball—spaces that cultivate support, collaboration, and togetherness. Competing at national and collegiate levels taught me the quiet strength of reliability—showing up for teammates in both triumph and adversity. Whether comforting a younger sister through college homesickness or coaching an injured teammate from the sidelines, I learned that leadership often lives in small moments of solidarity. Recently, I founded a soccer-and-science afterschool program in the Bronx to offer children in my community access to those same lessons—discipline, confidence, and the value of teamwork. It’s a full-circle return to where my leadership journey began: not in a title or position, but in being present.

Truthfully, my earliest lessons in leadership were learned at home, which laid the groundwork for the collaborative, dependable leadership style I bring to my professional life today. As a physician-scientist in training, I carry these lessons with me—leading with care, competence, and the belief that small acts of support can transform someone’s life.

**Describe the desired impact your research will make on the field and society, and why this is important to you. Include any personal, educational and/or professional experiences that have motivated your research interests.** *350 words*

Entering college, I was torn between studying clinical neuroscience—captivated by the brain’s unparalleled complexity—and bioinformatics, an innovative field that required logical rigor and creativity. As I delved deeper into research, I quickly realized the two disciplines exist not in competition, but in parallel—and that the most meaningful advances in healthcare would come from integrating them.

In my first research role, I helped develop a convolutional neural network to non-invasively measure naturalistic gait in neurological disease models, and was immediately captured by the ability of AI-driven tools to reveal profound insights into brain function and behavior. Eager to explore the power of bioinformatics to drive medical discovery, I’ve since applied novel AI methodologies to rigorously analyze data across a wide range of clinical domains—from identifying transcriptomic subtypes in a rare pediatric autoimmune condition at the NIH, to my most recent work, which has uncovered critical healthcare disparities in large clinical trials. These prior experiences have been the driving force behind my current research, as they reveal the immense potential of novel informatics approaches to extract meaningful insights from complex health data—insights that would remain hidden using traditional analyses.

Currently, my work centers on autism spectrum disorder (ASD)—a condition characterized by significant clinical and biological heterogeneity, which poses profound challenges for both diagnosis and treatment. In my proposal, we leverage a large, diverse dataset from children in the Bronx—a population historically excluded from research—that integrates rigorous clinical assessments and EEG from eight behavioral paradigms. Instead of relying on traditional analysis methods—which risk oversimplifying the complex neural and behavioral heterogeneity in ASD—we propose an innovative alternative: cluster-based identification of neural subgroups within ASD.

This methodology—applied to a uniquely rich clinical dataset—offers a rare and powerful opportunity to identify functional neural mechanisms that drive phenotypic variation in ASD, a challenge that has long hindered progress in the field. Above all, I am deeply motivated by the hope that this work moves us closer to personalized, effective care for individuals with autism—while demonstrating how data-driven methods can reveal insights into the brain’s complexity.