

Hannah Marino

Katie and I have been friends since we were six. Her confinement to a wheelchair due to Spinal Muscular Atrophy (SMA), a motor neuron disease, seemed minor when we were younger. However, her physical limitations dramatically impacted our friendship when I discovered my passion for running. We drifted apart, and our friendship was reduced to infrequent conversations.

During one conversation, Katie excitedly told me about the release of Spinraza, the first FDA-approved drug that corrects the underlying causes of SMA. The drug was introduced by Biogen, a company that creates drugs to fight neurological and neurodegenerative diseases. Motivated in part by my desire to understand a life-altering disease like Katie's, I researched Biogen and discovered its community lab program, Adventures in Biotechnology. I applied to the program and was accepted. The goal was to simulate a discovery research project in neurobiology, and I felt drawn to the challenge. With Biogen scientists' guidance, I had the opportunity to create green fluorescent protein (GFP) starting with the DNA from blue fluorescent protein (BFP). Fluorescent protein exhibits fluorescent colors when exposed to specific ranges of light, and it is commonly used to report gene expression. Relying on my knowledge of DNA and proteins, I designed the protocols for the project to discover if and how GFP worked better than BFP to image neurons and monitor disease states in the brain. Presenting my findings to scientists and guests was exciting. I was blown away by Biogen's ability to develop drugs that improve people's quality of life.

I was also prompted to reflect on Katie's experience with SMA and our friendship. The laboratory opened new creative doors for me. I felt a pressing need for Katie and me to

rediscover common ground. I had an idea. Katie's physical limitations did not need to limit our friendship—I could include her in my world. I asked her to train for a 5K race with me. She agreed. I ran while pushing her in a specialized wheelchair that I obtained for her. I loved seeing her exhilaration as she raced against the wind. Her sassy criticisms of my stride and cheeky comments about our competitive drive restored our camaraderie. While my cross-country meets and track and field events were always rewarding to me, crossing the finish line with Katie in the 5K was thrilling. Together, we had found a creative way to support each other and our abilities.