

Critical Path for Parkinson's Shares Internship Highlights from Mikayla Spott

Critical Path for Parkinson's is proud to highlight Mikayla Spott who joined the team as CPP's first consortium intern in August 2020. CPP was glad to play a part in her journey toward pursuing her dream of becoming a physician (and celebrates her recent acceptance to multiple medical schools!). *"We are delighted to share her story and hope to continue to pave the way for amazing, new talent to tackle the ongoing challenges of Parkinson's research and drug development,"* said CPP Executive Director Diane Stephenson, Ph.D. *"Her passion and dedication to Parkinson's research inspires us all to find better ways to collaborate and we invite you to read on about the work she did with CPP."*



I remember my first time dissecting a fruit fly brain and the shock that rolled through me. As a sophomore at Lehigh University, it amazed me that this microscopic organ was my key to understanding how Parkinson's disease (PD) manifests throughout the human brain. I started to develop a strong interest in this disease in particular, especially because of its manifestation of neurodegeneration in the form of both motor and non-motor symptoms. My project had focused on the selective vulnerability of dopaminergic neurons in a PD model using *Drosophila melanogaster*.

After two years of research with this lab, I wanted to expand my horizons and experience neuroscience from a new point of view. I set out to Copenhagen, Denmark, last spring to study advanced neuroscience electives. During my time there, I was selected to join a Danish lab at the Region Sjælland hospital, where I would study childhood absence epilepsy. This work focused on reading electroencephalograms of epileptic patients and identifying the best source localization technique software for epileptic activity. While this work strayed away from my initial interest in neurodegeneration, I was captivated by this neurological disorder. My principal investigator was a Danish epileptologist; we met weekly to discuss the project and also the topic of medicine in general. Dr. Kjaer seemed to view research and science from a different view than myself, and it was fascinating to see how he and his other Danish colleagues viewed research.

Upon my return home to the U.S., I found myself reflecting on my trip, and I realized that I loved being on a project that involved international scientific collaboration. While I had seen this type of cooperation on an epilepsy project, I knew I wanted to do it again, but this time within the Parkinson's field. I began researching for an opportunity to fit this vision, and after heavy research, I found the Critical Path for Parkinson's (CPP). This consortium's mission statement really resonated with me: to accelerate the development of drug-based therapies from up-to-date research within a collaborative setting. I contacted their team and joined in August of 2020 as their first intern.

One of the first things I learned at CPP was that people with PD take several different medications to treat their wide array of symptoms. These medications are known to impact the progression and symptoms associated with PD, and for this reason they must be carefully documented. However, there is no standard

medication documentation scheme to use across all clinical trials. For the span of my project, I wrote a viewpoint that drew attention to this need for a standardized medication log. To develop a viewpoint that accurately reflected this necessity, I met with several people that are part of the CPP team. Monica Javidnia, a neuropharmacologist that was heavily involved with a flagship natural history study called PPMI, was my initial source of guidance on the project. I have also met with people from CPP's Data Collaboration Center. This group works with all the data within the CPP database and is very familiar with the problems associated with medication logging. Listening to these different people's concerns and issues allowed me to synthesize a cohesive piece that addresses several issues. It is my hope that the viewpoint will spark more of a conversation within the PD scientific community.

Beyond the impact I hope my viewpoint will have, I have also been greatly impacted by my experience synthesizing it. One of my favorite aspects of CPP is its network of amazing people—neurologists, principal investigators, and pharmacologists. I have had the opportunity to attend meetings that presented interesting information on PD. As I learned new information each day, new questions continually bubbled to the surface. Despite my constant curiosity, I've never had a question left unanswered during my internship. The resources offered at CPP have made this an invaluable and unforgettable learning opportunity. Now that I have completed my internship, I'm currently in the process of applying to medical school. My manuscript with CPP will be my first publication as the lead author, and this will undoubtedly help me to stand out during the application process.