# Meet Our Members: Michelle Corkrum

Michelle Corkrum, MD, PhD, is a Child Neurology Resident at the Columbia University Irving Medical Center. She joined ASNR in 2021 to be part of a community dedicated to advancing patient care through scientific discovery in the field of neurorehabilitation. This year, ASNR was thrilled to award Dr. Corkrum one of our 2023 Diversity Fellowships. You can learn more about Dr. Corkrum and her exciting research in our interview below.

**1) How did you get interested in science, and what steps did you take to get to your current role?**

I am excited to pursue a career as a child neurologist physician-scientist because I have the opportunity to directly translate my research findings to clinical care and have my patient interactions inform my research approach. I conducted my MD-PhD training at the University of Minnesota, and I completed my neuroscience thesis dissertation in the lab of Dr. Alfonso Araque, investigating the role of astrocytes in dopamine signaling. During my training at the University of Minnesota, I also had the opportunity to work with Dr. Kathryn Cullen investigating the efficacy of repetitive transcranial magnetic stimulation (rTMS) in adolescent patients with treatment-resistant depression. My experiences propelled me toward a career investigating the pediatric brain and utilizing the intrinsic plasticity of the developing brain to create novel treatment interventions to advance clinical outcomes for pediatric neurology patients.

**2) What is the focus of your current research, and what are some of your findings?**

In the Movement Recovery Lab of Dr. Jason Carmel at Columbia University, my project aims to investigate the application of neural stimulation to target circuits disrupted in pediatric neurological diseases such as perinatal strokes. I utilize confocal imaging, electrophysiology, and behavioral assays to examine neural circuit changes that occur after perinatal stroke, and we are able to modulate these circuit changes using optogenetics and pharmacogenetics to examine behavioral outcomes. The overall aim of my current project is to test the hypothesis that thalamocortical sensory circuits contribute to movement recovery, and activation of sensory circuits improves functional movement outcomes in preclinical perinatal stroke models. The expected results would support that sensory circuit engagement plays an integral role in movement recovery after perinatal stroke. Additionally, if our hypothesis is supported, it would increase the translational potential of targeting specific circuits disrupted in pediatric neurological diseases and provide insight for novel neurorehabilitation interventions.

**3) How have you benefited from your membership in ASNR and receipt of the Diversity Fellowship Award?**

ASNR membership and the Diversity Fellowship award has provided an opportunity to expand my scientific network and be part of a community that values promoting the best patient care through thoughtful and rigorous research. At the annual meeting, I met experts in the field of neurorehabilitation as well as engaged with community members that our research directly aims to impact. I am happy to be part of a community that promotes scientific research through diverse lenses and actively engages the patient population we strive to help.

**4) What are your longer term career goals?**

My ultimate career goal as a child neurology physician-scientist is to investigate the neural circuitry implicated in childhood neurological diseases and develop efficacious, non-invasive neuromodulation tools to advance patient care. Overall, in my career, I envision myself running a neuromodulation research lab and clinic to advance neurorehabilitation for pediatric patients, and I look forward to mentoring the next generation of scientists to promote a love of learning and scientific discovery.

Follow Dr. Corkrum on Twitter (@CorkrumMichelle) to get connected!