

## Career Pathways : Dorothy Barthélemy, PhD, MSc, pht

### From the gym to the clinic, and then to the laboratory

“My path to higher education was not really mapped out in advance,” said Dr. Dorothy Barthélemy. In high school, she loved to learn, she did well in her classes, and she was on a competitive handball team - a sport that is very popular in Europe, especially in Scandinavia. She participated in a lot of sport competitions, and with that came injuries, bursitis in both knees, multiple ankle sprains, and she was almost as often on the physiotherapist's treatment table as on the sports field.

When Dr. Barthélemy got to the Université de Montréal, she started a Baccalaureate in Physiotherapy because she wanted to work with young athletes like the physiotherapists who had helped her. Dr. Barthélemy realized that many of her colleagues also had this goal, and to distinguish herself, she planned to open a private clinic that would not only treat athletes, but also treat different populations, especially in neurology, a clientele that she had discovered during her internships.

After graduation, Dr. Barthélemy worked at the hospital, and she was dismayed to find that despite her efforts and the clinical guidelines she followed, some patients did not improve with treatment. Even worse, she could have two patients referred to her with the same diagnosis, her evaluation could reveal similar impairments, but their recovery trajectories would be different. She began to wonder, “Am I assessing the right things?”

Left with many questions, Dr. Barthélemy decided to go back to university to undertake graduate studies. She contacted several researchers in Neuroscience and accepted a MSc position in the Department of Biological Sciences at the Université de Montréal. It was basic research, very different than what she had been exposed to before. And that's when she realized that this was the path for her. My passion, she discovered, was understanding the functioning of the brain and the spinal cord. To understand how we walk, how we learn to ride a bicycle, and how we learn to drive. And to understand how, after an injury to the brain or the spinal cord, the nervous system tries to heal itself through the reorganization of neurons or nerve pathways called neuroplasticity.

She first did a MSc in Neuroanatomy and then a PhD in Neurophysiology where she started to understand the neuroplasticity that occurs following a spinal cord injury, and also to test out ways to promote the recovery of locomotion in animal models. At the end of her PhD, Dr. Barthélemy knew that she wanted to be a researcher and also that she wanted to try to use the fundamental knowledge that she had acquired to try to improve the recovery of patients.

Dr. Barthélemy next traveled to Denmark for a postdoctoral fellowship at the University of Copenhagen. There, she learned advanced techniques in human electrophysiology. Shortly after starting a second post-doc in Paris, Dr. Barthélemy accepted a position at the School of Rehabilitation of Université de Montréal. Having traveled a lot for her studies since graduate school, Dr. Barthélemy was excited to finally settle in one place and focus on developing her own research ideas... or so she thought!



## Discovering the realities of faculty life

Throughout her graduate and postdoctoral studies, Dr. Barthélemy's supervisors and mentors regularly mentioned the need to maintain balance in life and to protect her time for what she really wanted to do. She never really appreciated the significance of this advice because she had always done several things at the same time.

In high school, she juggled sports (practice + games), school, and volunteering.

The story was the same for her in Cegep (pre-university school) and her undergraduate studies, when she added to the mix working as a cashier on the weekends and two evenings/week.

In graduate school, she no longer worked as a cashier, but in addition to her classes and lab experiences, she did teaching assistantships, was part of the student committee, continued to volunteer, and was getting involved in community outreach activities. "So really, I (foolishly and naively) did not think this advice was for me," she recalled.

The reality of being a research professor was a challenge for Dr. Barthélemy, and she had to quickly learn to master the skills of competency-based teaching for clinicians-students, sit on committees, contribute to the department and the research center, and sit on committees for funding agencies. All of these tasks had to happen in addition and in parallel to setting up her research lab (which was her main goal), getting salary awards and research grants, collecting data in the lab, and recruiting and managing students and lab personnel.

For someone who was used to always saying yes to challenges and was very willing to participate in all kinds of projects, the constant demands of the job were really stretching her abilities. She absolutely loved the job, but this felt as if it was three jobs all in one. "Doing it all, and trying to do it well, while still keeping time for other things in life? Yes, I needed mentorship quickly," Dr. Barthélemy noted.

This is when she started to develop several 'transversal skills' such as prioritizing, time management, delegation, and a variety of critical skills being highlighted in the American Society for Neurorehabilitation (ASNR)'s career development resources to make the best use of our time and our skills.

After a decade as an independent researcher, Dr. Barthélemy feels like she is still navigating this learning curve. In the meantime, having ways to better manage her time enabled more stability and productivity in her laboratory ([NeuroMobilityLab](#)). When she started her lab, Dr. Barthélemy's main focus was to understand mechanisms of motor recovery, but she quickly realized that several of the neurophysiological tools she was using could be introduced in a clinical setting to refine our assessments as well as measuring neuroplasticity changes due to the rehabilitation. Furthermore, her lab has recently added a new scientific direction and they aim to assess/develop novel rehabilitation strategies using electrical/magnetic stimulation tool to boost plasticity and lead to better function. For this new research direction, Dr. Barthélemy benefitted from an ASNR-sponsored TIGRR grantsmanship training workshop where she got a better understanding of the field, the financing landscape, and key concepts for improving her writing skills. Although she still feels like a 'relatively new' researcher, Dr. Barthélemy continues to be enthusiastic about several ongoing opportunities for collaborations and scientific development, and ASNR has been an important link for her to the exciting neurorehabilitation community.