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Reflections

Canadian Leader in Pediatric Neurology: Dr. Steven Miller

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The Canadian Leaders in Pediatric Neurology series is an initiative of the Canadian Neurological Society whose objective is to showcase exceptional accomplishments by Canadian neurologists who are leaders in their respective fields. In this first segment of the pediatric neurology series, Dr Dakota Peacock, a pediatric neurology resident at the University of British Columbia, interviews Dr Steven Miller.

Dr Steven Miller is a neurologist and leader at the University of British Columbia. He came to the University of British Columbia after serving a decade as the head of neurology at SickKids (University of Toronto), and of the Garry Hurvitz Centre for Brain & Mental Health. He is now the head of the UBC Faculty of Medicine Department of Pediatrics, the Chief of Pediatric Medicine at BC Children's Hospital, the Hudson Family Hospital Chair in Pediatric Medicine, and the James and Annabel McCreary Chair in Pediatrics. He is a Fellow of the Royal Society of Canada in recognition of his ground-breaking research which has shifted our view of neonatal brain injury from it being a fixed event with a set trajectory. We can now approach neonatal brain injury as an event with a modifiable future with the opportunity to promote brain maturation across the life span. He is also a scientific co-director of CHILD-BRIGHT, an innovative pan-Canadian patient-oriented research network that aims to improve life outcomes for children with neurodevelopmental disabilities and their families.

Dakota Peacock (DP): Walk Us Through Your Training Journey: Why Pediatric Neurology, and Why Neonatal Neurology?

Steven Miller (SM)

Pediatric Neurology came to be by surprise as I was initially interested in global health. I had an opportunity as a medical student to learn at a hospital in Ghana. We saw many children presenting with coma which was often caused by cerebral malaria, meningitis, or other endemic infections. After we found the cause and started their treatment, it was so exciting to watch them wake up, recover, and get back to playing. This experience really opened my eyes to the resiliency of children.

During my residency in Pediatric Neurology at McGill, I was privileged to work with so many excellent mentors who opened by eyes to the depth of pediatric neurology and to the joys of mentorship. I am so grateful to them. I also found that I loved the integration of clinical medicine with innovations in neuroscience.

Midway through my residency, I had the opportunity to listen to Dr Joseph Volpe discuss the nascent field of Neonatal Neurology. He masterfully wove clinical observations and scientific discoveries. The potential to advance the brain care of critically ill neonates was so exciting. Brain MRI was emerging as a clinical tool, and I remember looking at these images of a newborn's brain for the first time. The potential for this new window on the developing brain was most evident in seeing patterns of injury invisible to other clinical modalities. Integrating such a powerful tool into the care of such fragile patients opened a great frontier in medicine and neuroscience. I feel so honored to have had the chance to be a part of this journey and to have found new ways to support these children and their families.

DP: What Are Some of the Biggest Changes You've Seen in the Care of Newborns With Neurological Disease?

SM

If you told me early in my career that we would have acute brain protection therapies for the newborn in 2023, I would think that was science fiction. During my fellowship training, Neonatal Neurology was focused on making a diagnosis and sharing a prognosis. There was very little we could do to treat an acquired brain injury, so we focused on supporting infants and their families. Today's landscape is completely different. We have neuroprotection in the form of cooling for infants experiencing hypoxic ischemic encephalopathy, genetic treatments for infants with spinal muscular atrophy, and a host of other disease-modifying approaches for infants with other disorders. Pediatric Neurology is now a specialty where we can bring so much hope, and the realm of possibilities keeps widening.

Dp: What Do You Think the Future Holds for Pediatric Neurology?

SM

I think the future of pediatric neurology holds an opportunity to address the social determinants of health and apply this knowledge to support the wellbeing of our patients and families. These factors

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Figure 1: Drs. Dakota Peacock (left) and Steven Miller (right).

make such a profound impact on the health and development of our patients.

I think the way we approach research and clinical care is ready for some big changes too. Forming relationships with families and engaging with community partners will help us optimize the way we deliver care in a meaningful manner. Partnering with patient advocates to design patient-centered research is just one example of how we can practically make this a reality. I am reminded by a sign behind my desk of the words of Professor Levi-Montalcini: "I don't believe there would be any science at all without intuition." I find this a good reminder to pay attention to our patients in our clinic and listen to their families – they are the source of intuition.

DP: Can You Tell Me More About Your Transition from Clinician To Clinical Leader As The Chief of Pediatric Medicine?

SM

Leadership and administration were not trajectories I had in mind early in my career. As a young Faculty member, I found that one of my favorite parts of my job was mentoring students and residents, then seeing their professional and personal successes. Taking a position as Division Head of Neurology at SickKids was a great way to really focus on building up my colleagues and seeing their achievements. That's one of the most fulfilling parts of my career.

DP: What Do You Think Makes A Good Mentee?

SM

Mentorship is fundamentally a relationship between the mentor and mentee. This relationship is a professional one even though the focus is on the holistic success of the mentee. I believe that being a good mentee starts with humility. Being honest with your mentor about what is difficult for you and where you sometimes struggle allows your mentor to focus your growth on those aspects. A good mentor will challenge you to help you grow, and that can sometimes be uncomfortable. Your mentor won't know where to help build you up if you aren't open with them. And remember, that all mentors were once in your shoes as a mentee, and often still are.

DP: How Do You Maintain Balance Between Being A Physician, Leader, Researcher, Husband, And Father?

SM

Nothing is more important to me than my family. So, I try to be mindful and present – at work and at home. For example, when I'm at my son's hockey game, I make sure he has my full attention and energy.

Time is always a premium as an academic physician, and so being mindful of how you allocate time is important. Being efficient at work can really help make setting time aside more feasible.

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