

SPOTLIGHT ON THE FUTURE

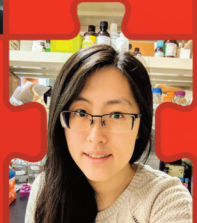
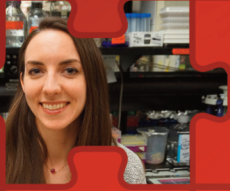


We are delighted to present the eighth edition of the endMS National Training Program's *Spotlight on the Future* newsletter. Inside, you will find profiles of our graduating SPRINTers and their mentors, photos from the 2019 endMS Summer School, and a welcome message from next year's Summer School hosts.

Firstly, we extend our heartfelt gratitude to Dr. V. Wee Yong and the Alberta MS Network, for hosting the 2019 endMS Summer School *The 3 Ps of MS: Pain, Protection and rePair*, from May 26-29 at the University of Calgary.

Forty trainees from across Canada participated in plenary sessions, workshops and translational activities that focused on bridging the gap between "Bench" (basic science) and "Bedside" (clinical research and care), in MS research. Trainees were guided through the exploration of topics related to neuropathic pain, neuroprotection and repair. Particular emphasis was placed on the work needed to understand these complicated targets of MS research, and on disease progression – all with the intention of bringing innovations to those living with MS.

continued on page 2



CONTINUED FROM FRONT PAGE 1

Summer School also included opportunities for participants to identify new strategies to enhance their career success, to synthesize and integrate ideas from different disciplines and to network with possible future collaborators. Additionally, participants were afforded the occasion to meet with and discuss, patient perspectives with people living with MS.

According to feedback we received from participants, favorite aspects of Summer School included: the opportunity to “network”, to “interact with people living with MS”, to “participate in career development and hands on workshops” and to “learn about MS from an interdisciplinary perspective”. Despite the full days of intensive learning, attendees found Summer School to be extremely rewarding.

Nine new 2019-2020 SPRINTers were welcomed to the program and met with their SPRINT teams the day prior to the Summer School. See page 8 for the list of current SPRINTers and mentors. It was also during the 2019 Summer School that our graduating SPRINTers presented the results of their thought provoking and innovative interdisciplinary learning projects.

Providing valuable information and guidance to the upcoming generation of researchers, it was great to see several former Summer School participants and SPRINTers in the roles of presenters and mentors at Summer School.

We thank our three outgoing mentors who, despite their heavy workloads, devoted time to mentoring and fostering our new SPRINTers throughout the evolution of their projects.

Bidding both new and graduating SPRINTers continued success in their future endeavors, we are happy to see that most former SPRINTers continue to pursue MS research or remain involved in the MS community.

Take a moment to see what our SPRINT alumni have been up to on page 11.

The success of the 2019 endMS Summer School is due to the dedication, efforts and enthusiasm of everyone involved. We sincerely thank all the committee members, faculty, presenters, facilitators, panel members, organizers and all participants affected with MS who have generously given of their time and expertise, to ensure that the endMS National Training Program continues to engage the next generation of MS researchers and move MS research forward.

The endMS National Training Program is delighted to have been accorded a three year funding renewal from the MS Society of Canada. As a result, we will continue to offer high calibre training programs such as the endMS Summer School and the endMS Scholar Program for Researchers IN Training (SPRINT).

We are excited about the future and enthusiastic with the prospect of continuing to learn and work together with you to expand the community of trainee researchers who, over time, will become experts and leaders in the field of MS research and clinical practice.

For a preview of what the 2020 endMS Summer School will offer, see page 9. More information about the application process will available in December.

To our current SPRINTers and mentors, we wish you a year of rewarding collaborations, fruitful research and remarkable discovery. We look forward to seeing you in Vancouver at the 2020 endMS Summer School, which will be held June 15-18 at the University of British Columbia.

DR. CHRISTINA WOLFSON
DIRECTOR, NATIONAL TRAINING PROGRAM

ANIK SCHOENFELDT
MANAGER, NATIONAL TRAINING PROGRAM

sprint

(Scholar Program for
Researchers IN Training)

THE 2018-2019 SPRINTERS AND MENTORS

Our SPRINTers:

Rhiannon Campden
Thomas Edwards
Negar Farzam-kia
Dr. Kedar K.V. Mate
Chantel Mayo
Yodit Tesfagiorgis
Angela Anran Wang
Jin Li (Ivy) Xiong

and our mentors:

Dr. Lindsay Berrigan
Dr. Setareh Ghahari
Dr. Craig Moore

DR. LINDSAY BERRIGAN

Dr. Lindsay Berrigan, originally from Grand Bay, New Brunswick, Nova Scotia where she is associate professor in the Department of Psychology at St. Francis Xavier University.



Dr. Berrigan obtained her BSc (Honours) in psychology, from the University of New Brunswick and her MA and PhD in psychology, from Carleton University in Ottawa, Ontario. Her postdoctoral fellowship was completed at Dalhousie University in Halifax, Nova Scotia.

While doing research for her master's thesis, Lindsay worked on evaluating the effectiveness of a newly developed neuropsychological test that detected the effects of multiple sclerosis on cognition. She recalls, "I have always been interested in how changes in the brain can affect our thoughts and behaviours."

That project led to an even deeper interest in the subject. "It was clear there was a lot of work to be done to better understand how MS affects cognitive functioning, how clinicians can recognize MS-related cognitive difficulties, and how to best manage them."

"I knew after that project that the MS community was special and that I wanted to continue to work on research that could help serve them."

Dr. Berrigan is hopeful that a cure for MS will be found in her lifetime. She believes the number of new treatments made available over the past decade supports this possibility. Currently, Dr. Berrigan is investigating how MS-related cognitive difficulties affect both quality of life and the ability to carry out the necessary activities of daily living. She reveals that this research began "in collaboration with the SPRINTers".

Further to examining the influence of mood disorders on cognitive functioning and the brain activity that supports cognitive functioning for those affected with MS, Dr. Berrigan is also working on developing and evaluating tools that could be used to identify when someone is experiencing MS-related cognitive difficulties.

In addition to her first graduate supervisor, Dr. Tom Tombaugh, Dr. Berrigan credits several researchers for having encouraged and mentored her throughout her career.

"Dr. Lisa Walker helped me to develop my assessment skills and to understand the needs of clinicians treating those with MS and other neurological disorders. Dr. Jo-Anne LeFevre impressed upon me the importance of conducting theoretically-based research, using rigorous research methods, and helped me to improve the communication of my research findings. Dr. Ruth Ann Marrie and Dr. John Fisk provided me with opportunities and the training necessary to be involved in large-scale research projects working as part of interdisciplinary teams."

A mentor this past year, Dr. Berrigan was formerly a SPRINTer during her postdoctoral fellowship.

"I had a fantastic experience when I was a SPRINTer—learning new things about MS and conducting research, and making connections. I was happy to get to be a part of the program again, this time as a mentor."

She says both experiences, "challenged me to step outside of my comfort zone and work on projects that are novel for me in some way. I got to work with individuals from a variety of disciplines who have introduced me to mindsets and research practices that I was not previously familiar with. SPRINT helps you make connections and fosters a team approach that enriches and improves the research being done."

When not involved in her research, Dr. Berrigan spends her free time with her three young children, Brodie, Chelsea, and Rowan.

"We enjoy being outside as much as we can—swimming, biking, and playing sports."

Dr. Berrigan plans on teaching future generations about neurological disorders and hopes to spark their interest in neuropsychological research.

RHIANNON CAMPDEN

Originally from Southampton in the United Kingdom, Rhiannon Campden grew up on Bowen Island, in British Columbia.

During her teens, Rhiannon worked part time at "The Ruddy Potato" a small, local health food store. Stocking shelves and assisting customers taught her the importance of, "working hard to get the job done." That lesson continues to benefit her current endeavors as a PhD candidate at the University of Calgary, in Alberta. With a Bachelor of Science degree from Queen's University in Kingston, Ontario and a Master of Science degree from McGill University in Montreal, Rhiannon initially began her studies in pharmacology and therapeutics.



"I realized that to achieve my goal of working in industry it would be better to study immunology because any pharmaceutical drug will fundamentally be interacting with the immune system."

"I know more people than I can count on two hands that have an autoimmune disorder. Because MS affects so many people in Canada, I decided to focus on MS for my PhD."

Fascinated by the intricate workings of the immune system, Rhiannon is hopeful that increased biomedical knowledge about the immune system's functions will lead to the design of MS treatments that target the root of the problem.

"Ultimately, I think that facilitating the repair of damaged neurons, in combination with a full understanding of how the immune system breaks down during MS, will enable us to find a cure."

With a long-term career goal of working in industry and bringing pharmaceuticals to market,

Rhiannon's current PhD work with Dr. Robin Yates is focused on understanding how inflammation develops.

She elaborates, "The enzyme cathepsin Z, a protein that cuts up other proteins, can activate a pathway within cells that causes the release of a very important inflammatory molecule called IL-1 β . IL-1 β is released from cells in the early stages of inflammation and acts to guide a number of different responses within the immune system. IL-1 β has been detected in the cerebral spinal fluid of MS patients, particularly in more aggressive forms of MS."

Conversely, Rhiannon's project with SPRINT mentor Dr. Lindsay Berrigan, concentrates more on neuropsychology. Specifically, the relationship between cognitive impairment and quality of life in MS.

"As a molecular biologist, I learned more about cognitive impairment in MS and the human element of MS."

Rhiannon credits SPRINT with having helped improve her critical collaboration skills.

"There is so much to be learned from others in terms of their different perspectives and the different research that they do."

Furthermore, Rhiannon's participation in SPRINT enlightened her as to how she could contribute to MS research in ways that are outside of her specific training within her PhD.

"I feel honoured to be a member of a community of researchers that work on MS... so many people working together to find a cure for MS is very inspiring."

When not pursuing her studies, Rhiannon derives additional inspiration from exploring the mountains of Alberta on foot and by bike. An amateur rock climber, Rhiannon says that climbing allows her to use a different set of skills than those she employs in the lab.

"I love the sense of accomplishment that I get when I have completed a hard climb."

Always eager to learn new things, Rhiannon recently learned how to crochet, and is planning on learning how to draw and paint this year.

Feeling fortunate to have participated in SPRINT, Rhiannon Campden extends "a huge thank you" to the MS Society of Canada for funding the endMS Training Program. She sincerely hopes many future generations of researchers will be afforded the same opportunity.

THOMAS EDWARDS

Originally from Bracebridge, Ontario, Thomas Edwards currently resides in Ottawa, Ontario, where he is a second year doctoral candidate at the University of Ottawa, under the guidance of Dr. Lara Pilutti.

Thomas completed his undergraduate studies at Brock University in St. Catharines, Ontario, and later went on to obtain his MSc degree from the University of Illinois in Champaign, Illinois.

While working on his undergraduate degree, Thomas spent the bulk of his spare time volunteering at an exercise facility designed to accommodate individuals with neuromuscular impairments. It was during this period that Thomas developed a particular interest in deciphering how exercise training could be used to both improve the fitness, and manage the symptoms of people living with MS. He also became, “very intrigued by the variability of MS symptomology and the ways that individuals were affected differently.”



Courtesy of his experience volunteering at that facility, Thomas decided that, “Being involved in research would be a great way to continue working with people with MS in an exercise setting and have the opportunity to optimize exercise training for people affected with MS.”

After getting to know several individuals affected with MS who required the use of wheelchairs for mobility, Thomas came to the realization that unfortunately, they had very limited therapeutic options available to them, despite having the greatest need for rehabilitation.

Consequently, Thomas began working on identifying, (from a physiological perspective) how individuals with MS—in particular, those who use wheelchairs—responded to different adapted exercise modalities.

With a keen interest in examining the benefits of functional electrical stimulation cycling exercise, Thomas hopes the results of his study will inform the development of exercise training interventions—and that these interventions will eventually be used to help manage symptoms and promote rehabilitation for individuals with limited mobility.

Thomas admits that there are several logistical challenges involved in recruiting participants for his research studies. He explains that the majority of these exercise interventions often involve very lengthy commitments, (sometimes upwards of 6 months)—and often require participants to visit the laboratory facilities multiple times within a single week. Unfortunately, inherent physical constraints can make this very challenging for individuals affected with MS.

Nevertheless, Thomas remains determined.

“While working in the MS field, I am always reminded of just how much research can still be done to improve the lives of those with MS and am constantly motivated to address these important research questions.”

“SPRINT has been an amazing experience and has given me the opportunity to work closely with other young researchers outside of my field. Through my collaboration with the SPRINT researchers, the program has allowed me to appreciate different facets of MS research, providing me with a greater understanding of some of the challenges these researchers encounter.”

Thomas describes his supervisor, Dr. Lara Pilutti, as having been a valuable mentor throughout his research career. He says that without her insightful guidance he would not be where he is today.

Reflecting on his SPRINT experience, Thomas says, “I would recommend SPRINT to any young MS researcher. SPRINT is a tremendous opportunity to learn something new about MS and it allows researchers to make connections with like-minded researchers from across Canada.”

In the hopes of enhancing the health and wellbeing of those afflicted with MS, Thomas Edwards’ long-term goals are to attend medical school and to eventually incorporate exercise training into his practice.

While not focused on research, Thomas, who is a self-proclaimed, “Nacho Connoisseur” enjoys exploring the various gastronomic options available in the Ottawa area.

NEGAR FARZAM-KIA

Negar Farzam-kia earned her Bachelor of Science degree from the University of British Columbia in integrated sciences, with a minor in French. She first embarked on her master’s degree at the University of Montreal in neuroscience, before transferring to the PhD program in neuroscience, where she is currently working under the supervision of Dr. Nathalie Arbour.



Born in Tehran, Iran, Negar was raised in Vancouver, British Columbia where her first job was as a cashier in a grocery store.

Negar says that working as a cashier for four years helped refine her communication skills and taught her how to solve problems quickly. As she readily admits, “No one likes standing in line at the grocery store!”

The values of hard work and persistence were also instilled in Negar, courtesy of that first employment experience.

“I believe that these skills have been very useful throughout my graduate studies and will continue to be useful moving forward in my career.”

Negar recalls first learning about MS during her undergraduate studies at the University of British Columbia.

“I learned about the interplay between the immune system and nervous system, and became fascinated by how dysfunction or dysregulation here can lead to pathology, such as in MS.”

Subsequently, Negar volunteered in an MS research lab, after which she later completed two summer internships in two different labs.

“The more time I spent in the lab learning about MS research, the more interested I became in pursuing graduate studies in MS,” she explains.

Negar’s current PhD project focuses on immunological mechanisms that may be implicated in MS pathobiology. More specifically, she’s studying an inflammatory mediator and the mechanisms regulating its expression levels on certain white blood cells.

“There is so much that we still don’t know about MS. The heterogeneity of the disease, the different subtypes and symptoms affecting people living with MS, why certain people respond to one therapy and not others...all of these are aspects of MS that I find particularly intriguing. I believe further research in these areas, as well as research focused on progressive forms of MS, hold great promise for future therapies to improve quality of life for people living with MS.”

“Participating in SPRINT has taught me many things! I have learned about different topics in MS research, especially the clinical side—to which I had not had too much exposure in the past. I learned what a scoping review was and how to perform and write a scoping review...which was completely new to me. Additionally, I learned what it takes to work on a project with colleagues at different institutions across Canada and how to effectively communicate information.”

According to Negar, SPRINT was a challenging yet rewarding experience that allowed her to collaborate with other trainees and researchers on a project outside of her PhD thesis. This opportunity granted Negar wider exposure to the multitude of topics within the field of MS research—while simultaneously enabling her to expand her professional network.

“Working on an interdisciplinary team where each participant brings a different perspective to the table was a great experience. It is also a great opportunity to network and meet trainees as well as researchers working in this field.”

Negar says that thanks to her participation in SPRINT, she has become more familiar with the different aspects of MS research and the work that is being done, “which will allow me to consider different career options moving forward.”

When not researching, Negar is an avid podcast listener. She also enjoys spending time with her friends, watching TV shows and movies. Physically active, Negar goes to the gym, hikes and practices yoga.

DR. SETAREH GHAHARI

Born in Iran, Dr. Setareh Ghahari currently lives in Kingston, Ontario where she is an assistant professor at Queen's University, School of Rehabilitation Therapy.

Setareh completed her undergraduate and master's degrees in occupational therapy in Iran before moving to Australia where she obtained her PhD at Curtin University. After working as a senior research fellow for one year, Dr. Ghahari moved to Canada where she completed a two-year post-doctoral fellowship at the University of British Columbia.

For over 18 years, Dr. Ghahari has worked as an occupational therapist (OT), devoting her time to helping people afflicted with neurological conditions, including MS. She describes her work as being very interesting and rewarding.



"I am very proud of being an OT—it is a profession that helps people live and enjoy their lives..."

With extensive international experience in teaching and research, Dr. Ghahari's career has spanned three continents.

Reflecting on the five years she spent working at an MS clinic in Iran, and the one year she spent working at the MS Society in Australia, Dr. Ghahari says, "During my work as a clinician, I learned that fatigue is a major problem for people with MS, it impacts every aspect of their life. Therefore, my PhD study focused on fatigue self-management. My postdoctoral fellowship also partly focused on fatigue."

Citing her former PhD supervisor, Dr. Tanya Packer, and her former postdoctoral supervisor, Dr. Susan Forwell, Dr. Ghahari says, "They are both still supporting me and are my 'go to' mentors for a variety of questions that I have."

Regarding her own role as a SPRINT mentor this year, Dr. Ghahari says that SPRINT provided a unique opportunity for everyone to learn from each other through a "different language and lens."

Dr. Ghahari's involvement with SPRINT allowed her to work with students from other disciplines, which she admits "was a challenge that I wanted to try." She reveals that participating in SPRINT was a very positive experience, through which she learned, "how broadly researchers are working on MS. It was very promising to see how many studies are focused on a cure for MS."

Currently working on the navigation and access to health services for people with MS, Dr. Ghahari explains, "Research is telling us that we need to take several steps to get closer to optimum access. I am working on educating people with MS to help them access and get the most from available resources."

Although Dr. Ghahari is currently involved in a large study to compare three different formats of a self-management program in a randomized controlled trial, she reveals that her biggest challenge lies in securing funds for much needed areas of MS research including self-management and rehabilitation.

Despite the obstacles related to funding, Dr. Ghahari maintains her determination by always, "remembering how much my clients need rehabilitation."

"Because of the nature of occupational therapy, we tend to engage with our clients for a long time. We meet them several times and might visit them in their home. We literally 'observe' how our services significantly change the person's life... I found that people with MS are very enthusiastic in challenging life. That was and still is keeping me in the circle of MS and working with these amazing people."

When not working, Dr. Ghahari enjoys travelling and spending time with her family.

While Dr. Setareh Ghahari is hopeful that a cure for MS is forthcoming, until that time, she will continue working on different aspects of MS rehabilitation to improve the quality of life for those affected by MS.

DR. KEDAR K.V. MATE



Born in Mumbai, India, and currently residing in Montreal, Quebec, Kedar K.V. Mate completed his BSc PT, MSc, and fellowship in neurological physiotherapy in India.

He recently earned his PhD in rehabilitation science from McGill University, in Montreal.

Dr. Mate's first job was at a private hospital where he practiced as a clinical physiotherapist mostly working with adults with neurological conditions—many of whom were affected by MS. Consequently, he developed a profound interest in neurology and subsequently went on to do his fellowship in neurological rehabilitation.

"As with most neurological conditions, MS affects not only the person with the health condition but also the rest of his family," Dr. Mate says. For this reason, he is driven to do everything he can to help make a significant difference both for the person with MS and their family.

"There are people living with MS at this moment who need our help to maximize their potential, and improve their quality of life."

As a postdoctoral fellow at the Mayo Clinic in Arizona, Dr. Mate's work involves reporting on the health outcomes of people who are afflicted with sarcoma related cancers.

"People with sarcomas face unique challenges in terms of loss of function, impact on quality of life, and their experience with the health care system. Commonly used generic patient reported outcomes in cancer do not capture these unique experiences."

In order to improve this situation, Dr. Mate explains that measurement is integral to his research. He says,

"As a researcher in outcomes, I am interested in testing existing measures using Rasch Measurement Theory," adding, "To measure is to know and if you cannot measure it, you cannot improve it." This concept lies at the heart of all of Dr. Mate's research work.

Kedar K.V. Mate was exposed to the notion of measurement early on in his academic career.

He further emphasizes its importance by quoting Lord Kelvin, a renowned mathematical physicist and engineer from the early nineteenth-hundreds.

"When you can measure what you are speaking about and express it in numbers, you know something about it. When you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind."

Dr. Mate does not solely attribute his current inspiration to scholars from the past. He credits his PhD supervisor, Dr. Nancy Mayo, (whom he refers to as, "an expert in the field of quality of life,") for having inspired his decision to work in the field of health outcomes research.

Dr. Mate reveals how much he appreciated SPRINT's multidisciplinary approach. Sharing his ideas in a collegial setting, amongst diverse researchers who were all trying to communicate using a common scientific language, was a beneficial experience that he sums up by paraphrasing a quote attributed to physicist, Dr. Richard Feynman, "If you cannot explain something in simple terms, you don't understand it."

Dr. Mate believes it is imperative for young researchers to work with experts from other fields. "I was always interested in working on an interdisciplinary project as I needed that additional challenge. SPRINT was just the perfect opportunity."

Kedar K.V. Mate's long-term goal is to establish a career, "as a health outcomes researcher either in academia or industry and to work more at a population and policy level."

As the recipient of a large dataset from the Canadian Institute for Health Information (CIHI), Dr. Mate is now hoping to pursue public health research on an equally large scale for MS.

When not contemplating measurements, Dr. Mate loves to ride his bike, go for walks and admire the architecture of diverse neighborhoods. When not partaking in outdoor activities, he enjoys reading the news, novels and murder mysteries.

CHANTEL MAYO

From Winnipeg, Manitoba, Chantel Mayo currently resides in Victoria, British Columbia where she is completing her PhD in clinical psychology, at the University of Victoria.

Chantel says, "I am hopeful to have a career in which I will be able to contribute to the MS community in both a research capacity as well as through direct service provision as a registered psychologist."

On the road to achieving this goal, Chantel earned her Bachelor of Science degree from the University of Winnipeg, and her Master of Science degree from the University of Victoria. Chantel then made the decision to specialize in Neuropsychology.

Elaborating on the direction of her current research work, Chantel explains, "My training to date has focused on researching brain-behaviour relationships, as well as developing clinical assessment and intervention skills with a broad focus on neurological disorders. My doctoral research uses magnetic resonance imaging techniques to assess brain structure and function pre- and post-intervention for MS."

Chantel's ultimate goal is to inform evidence-based MS treatments that target improved cognitive and psychosocial functioning.

A proponent of patient-oriented research, Chantel Mayo says that collaborating with people who are affected by MS is vital to her research and to her increasing understanding of the disease.

"A special part of my dissertation work is that we have numerous community members affected by MS with whom we have consulted and collaborated at multiple points throughout our study so far... it is important to me that we strive to make research advances that are valued by those affected by MS, including individuals with MS as well as their family and/or friends."

Chantel considers herself fortunate to have had a number of excellent mentors throughout her years of training. She lists her current PhD, supervisor, Dr. Jodie Gawryluk,

a clinician-scientist with expertise in neuroimaging, as being amongst her most influential mentors.

Together, they are currently exploring the "brain-based evidence for MS as a symptom management strategy for individuals with MS."

Chantel believes that Dr. Gawryluk's mentorship and unwavering support throughout her training has been paramount to her success to date.

Having completed her master's degree with a different research focus, Chantel realized that participating in SPRINT would be an ideal way to fully immerse herself in MS research and would also help her connect with other researchers who are working within the same field.



Chantel credits SPRINT with having given her the opportunity to expand her research network, and for having put her in touch with members of the MS community—people from whom she learned a great deal.

"endMS SPRINT is a great opportunity to learn more about MS from an interdisciplinary perspective. Through this experience, I was able to collaborate with other MS researchers from fields outside of my own and visit other MS labs and clinics in Canada. Importantly, I was also able to interact with individuals immediately impacted by MS, hear their unique stories, and learn about their wishes for the future of MS research."

When not busy pursuing MS research, Chantel enjoys spending time outdoors and exploring the many beautiful regions of British Columbia.

Chantel Mayo wishes to thank the MS Society of Canada for funding the endMS Training Program which gave her the opportunity to participate in the 2018-2019 endMS SPRINT.

DR. CRAIG MOORE

Originally from Saint John, New Brunswick, SPRINT mentor, Dr. Craig Moore currently resides in St. John's, Newfoundland, where he is now associate professor in the Division of BioMedical Sciences and Tier 2 Canada research chair in Neuroscience and Brain Repair, at Memorial University.

Dr. Moore received his BSc (Honours) in biology from the University of New Brunswick, in Fredericton, before becoming a PhD candidate at Dalhousie University in Halifax, Nova Scotia. He was a postdoctoral research fellow at the University of Connecticut Health Center in Farmington, Connecticut, and later at the Montreal Neurological Institute and Hospital of McGill University.

Having devoted over 15 years to MS research, Dr. Moore has witnessed the substantial progress that has been made with MS therapies. However, in order to achieve his goal of creating improved treatments for those affected by MS, he believes greater focus must be placed on researching the complexities within the brain.

Striving to fill this gap in MS research, Dr. Moore is currently researching brain repair and remyelination. Ultimately, searching for specialized cells that oversee how the brain repairs itself.



Dr. Moore summarizes his quest using layman's terms, "I work on understanding how cells in your brain work together to stimulate repair. Similar to how you need to engage plumbers, architects, electricians, and builders to help 'repair' a house after a fire, you need a foreman to orchestrate the work and ensure it happens efficiently..."

In his own lab, bridging basic and clinical neuroimmunology, Dr. Moore provides trainees with opportunities to test novel hypotheses. He says that, "The interplay between the

neural networks and the immune system is becoming more apparent in many different neurological conditions, thanks in large part to the scientific contributions made by MS researchers."

Having been both a SPRINTer and a SPRINT mentor, Dr. Moore admits that he learned a lot from trainees in his capacity as mentor. Referring to his own mentors as amazing people who have helped shape both his present and future, Dr. Moore expresses particular gratitude to his former postdoctoral supervisors, Dr. Jack Antel and Dr. Amit Bar-Or, from the Montreal Neurological Institute and Hospital. Both doctors gave him valuable insight into MS—and the research thereof. They also taught him, "how to supervise, train, educate and inspire."

When not supervising, training, educating and inspiring his own students, Dr. Moore enjoys spending quality time outdoors, exercising and playing with his three-year old daughter.

Despite his numerous achievements, Dr. Moore confesses to having encountered some obstacles along the way. He lists "finding research dollars" and "competing scientifically with extremely bright minds from across the globe" as being amongst his greatest challenges.

Dr. Moore advises SPRINTers to network and "take every advantage of what the endMS Training Program has to offer," revealing that SPRINT helped him open the door for communication with other researchers and trainees across Canada.

"As a past SPRINTer myself, I understand what there is to gain from going through this program."

Dr. Moore generously praises the dedication of the entire MS community, especially senior and established researchers who foster trainees in the early stages of their careers. Given his own passion for training prospective MS researchers, Dr. Moore hopes to continue this legacy in the future.

"I also wanted to give back for what the endMS Training Program has provided me throughout the years."

Reflecting upon his career, Dr. Moore reveals that he always wanted to be either an educator or work in the medical field.

Acknowledging that his current job allows him to be both, he gratefully declares, "I have the best job in the world!"

YODIT TESFAGIORGIS

Born in Kitchener, Ontario, Yodit Tesfagiorgis obtained her BMSc (Honours), in microbiology and immunology with a Minor in cell biology, from the University of Western Ontario. Currently living in London, Ontario, Yodit is a PhD candidate in microbiology and immunology at the University of Western Ontario.

A first job at McDonald's taught Yodit the importance of finding joy in all endeavors.



"Sometimes the job may not be glamorous or easy, but as long as you can work earnestly and end the day with a smile on your face, it makes all future days and possibilities that much more exciting."

This positive attitude is also shared by Yodit's sister.

"While finishing up the third year of my undergraduate degree, my sister Helen was diagnosed with MS."

Yodit reveals that despite her symptoms, Helen "remained strong and hopeful for her future."

"Coming from a microbiology and immunology major, I was instantly compelled to understand as much as I could about this diagnosis."

Her intense curiosity, coupled with an avid interest in research and medicine, inspired Yodit to work with Dr. Steven Kerfoot on a project that "focused on understanding the inflammation that occurs in the central nervous system in an animal model of MS". Yodit subsequently completed her fourth-year thesis project in Dr. Kerfoot's lab.

Attributing her solid determination to the influence of her mother, Yodit says that being a first generation Canadian has afforded her the ability to recognize the advantages of living in this country."

"My mother escaped Eritrea due to the war with Ethiopia...when I was a child I remember seeing my mother go to school while also working a full-time job to support her three children, eventually achieving her diploma. This taught me to never take anything for granted and that nothing in life is easy; if you work hard and focus on the important goals you aim to achieve, you can accomplish almost anything you set your mind to."

Yodit's current research focuses on determining why B cells (a recently discovered key contributor to MS) can be so insidious.

"My hope is that by understanding exactly what B cells are doing to contribute to MS we can specifically target the damaging B cells, while maintaining the population of protective ones."

Under the mentorship of Dr. Lindsay Berrigan, Yodit's SPRINT project focuses on cognition and the effects it has on quality of life for people living with MS.

"There are many different factors that can contribute to the quality of life in individual experiences, so being able to change even one of those things will hopefully help alleviate or eliminate the suffering caused by MS."

Courtesy of her SPRINT experience, Yodit says she acquired new skills, including the ability to write a systematic review. SPRINT also made her aware of the numerous ways in which she can remain involved with MS research, regardless of her career trajectory.

"It was a privilege to have the chance to understand the different fields of MS and discuss the impact Canadian researchers are having in understanding the disease."

Driven to be a physician-scientist, Yodit admits, "Being able to interact with people and witness firsthand the impact research has on the lives of so many would be the most satisfying career I can think of."

Outside of the lab, Yodit derives satisfaction from training for, and participating in, triathlons.

Yodit Tesfagiorgis extends heartfelt gratitude to everyone involved with the MS Society of Canada. She hopes that the generous support they provide for the study of this disease will bring hope to those who struggle with MS, including her sister Helen.

ANGELA ANRAN WANG

Hailing from Guangzhou, China, Angela Anran Wang obtained her BSc from the University of British Columbia (UBC). Now living in Toronto, Ontario, she is presently working on her PhD in Dr. Gommerman's lab, in the Department of Immunology, at the University of Toronto.

"Autoimmunity in general has been a long-standing interest," Angela says, adding that she is particularly intrigued by the events that lead the body to attack itself.

"Almost every disease has an immune component. Overall it has been a rapidly growing field and it hasn't been that long since immunomodulatory treatments have been available on the market. I think there is still a lot of interesting work to be done."

During her second year of undergraduate studies, Angela landed her first job at an infectious disease clinic in downtown Vancouver.

In retrospect, Angela says she feels fortunate to have been able to work in a healthcare-related setting since the beginning of her academic career.

"At the time, I thought I would do research related to viral infection, but the overall immune regulation events that occur, are in the same vein."

Also, during her undergraduate studies, Angela worked at UBC in Dr. Marc Horwitz's lab, on a project using the animal model of MS. Concentrating on that particular project led her to pursue MS research in graduate school.

Angela explains that like most research work, using experimental animals is time consuming and often yields negative results. Regardless, she remains undeterred and hopeful, overcoming this challenge by staying curious and by "being diligent with experiments, even though it may be disheartening at times."

"The hope is always to find a cure for MS. In the meantime, learning to manage or delay disease is equally important."

Angela's PhD project aims at understanding how gut-derived antibody secreting cells protect against animal models of EAE (Experimental Autoimmune Encephalomyelitis), specifically through the production of anti-inflammatory molecules.

"The bigger picture is understanding the basic science behind how gut immunity against microbiota and the environment could potentially respond to inflammation at a distal location, such as the brain."

With a long-term goal of pursuing MS research, either in academia or industry, Angela credits Dr. Jen Gommerman, Dr. Marc Horwitz and Citlali Marquez — the PhD student Angela worked with at UBC, for having helped guide her on her academic path thus far.



"I would probably not be in MS research if they did not take me in and mentor me during my undergraduate project."

Angela participated in SPRINT because she "wanted to engage in a form of MS research that was not laboratory-based, and SPRINT offered an avenue to do so in a productive way."

Her SPRINT project examined how MS treatment prescription patterns vary across the Canadian provinces. The results awakened Angela to "the challenges that patients face in accessing treatment."

"I once thought this type of research was straightforward—just look at a database, do some stats, and arrive at conclusions...it turns out, the world of clinical research is much more complicated than it appears, and I have since developed a new-found appreciation for epidemiologists and biostatisticians."

Outside of work, Angela admits that spending time with her newly adopted cat has become her preferred method of stress relief. Rock climbing and bouldering with friends are other activities that help Angela clear her mind and refocus.

Grateful to the MS Society of Canada for funding the endMS Training Program, Angela Anran Wang is thankful for the support they provided, which enabled her to meet with collaborators across the country.

"I would recommend SPRINT to anyone that wants to become more involved in the MS research community in Canada."

JIN LI (IVY) XIONG

Born in Wuhan, China, Jin Li Xiong, or Ivy, as she is known to her friends, obtained her BSc (Honours) in kinesiology from McMaster University in Ontario, where she is currently a second-year master's student.

Ivy first developed an interest in pursuing MS research, while she was volunteering at McMaster University's Physical Activity Centre of Excellence (PACE)—a research and training centre focused on rehabilitation for the older population and for those affected by disabilities and chronic diseases.



"By volunteering in this program, I had my first exposure to people living with multiple sclerosis."

Ivy's first job was as an assistant at PACE. She attributes the four years she spent there with helping her hone her communication, observation, organization and management skills.

These days, Ivy is concentrating on the correlation between exercise and brain health in people living with MS. She says that her relationships with PACE program participants inspired her to conduct clinical research that will hopefully translate into tangible benefits for them.

"I truly believe that while a cure is on its way, we as researchers can find ways to help tackle their disabling symptoms, so that people living with MS can live more freely and happily."

"The focus of my research is mostly on how exercise can help with reducing fatigue. Since fatigue is such a prevalent and disabling symptom that affects a lot of people living with MS, I would like to find ways to help them gain more of their life back by tackling their fatigue."

Prior to participating in SPRINT, Ivy's research focus was predominantly clinically based. She says that SPRINT enabled her to learn more about the drug approval process.

"It was quite surprising for me to realize that there is a lot going into choosing, prescribing and accessing the medications."

Ivy believes that her interest in continuing research in MS is partially due to her SPRINT experience.

"endMS Summer School and endMS SPRINT have shown me that there is a lot of breadth and support for research in this field...I have gained so much from this invaluable experience both academically and personally."

According to Ivy, collaborating with a diverse group of researchers and examining MS related issues through varied perspectives using a multidisciplinary approach, allows each study to, "become more well-rounded, better thought out, better designed, and have more potential clinical significance down the road."

This collaborative approach has also had the added benefit of helping Ivy enhance a host of her skills. Most notably, she reveals that her ability to present research has greatly improved, thanks to SPRINT. Consequently, her self-esteem and confidence have also increased.

"I think that it is always good to be hopeful, and I am really looking forward to the day that a cure is found for MS." She adds, "I feel that if we try hard enough, we can overcome any obstacles...I want to do as much as I can to help."

When not researching, Ivy admits to having some unique pastimes.

"In my spare time, I read fictional novels or look through different graphic design pictures. Sometimes, I go hiking. I re-energize quite easily with some sweets or anything that is fluffy or cute."

Ivy Xiong admits that she would "not have been able to make it to this point" without the support of her supervisor, Dr. Audrey Hicks. She also wishes to express gratitude to Dr. Christina Wolfson for having initiated SPRINT, and to Anik Schoenfeldt for having implemented it.

"I was so blessed to be able to participate in this amazing program. Many thanks to everyone who made this possible."

2019-2020 SPRINTers

Jessica Allanach	<i>University of British Columbia</i>
Arthur R. de A. Chaves	<i>Memorial University</i>
Dr. John Farrell	<i>University of Ottawa</i>
Hélène Jamann	<i>Université de Montréal</i>
Miceline Mésidor	<i>Université de Montréal</i>
Nikki Ow	<i>McGill University</i>
Dr. Melanie Pieber	<i>University of British Columbia</i>
Karin Rustad	<i>University of Regina</i>
Camille Simard	<i>Université de Sherbrooke</i>

2019-2020 SPRINT Mentors

Dr. Charity Evans	<i>University of Saskatchewan</i>
Dr. Soheila Karimi	<i>University of Manitoba</i>
Dr. George S. Robertson	<i>Dalhousie University</i>

2019-2020 endMS Education and Training Committee Membership

Dr. Christina Wolfson <i>(Chair)</i>	<i>Director, endMS National Training Program McGill University</i>
Dr. Nathalie Arbour	<i>Co-Director, endMS National Training Program, Université de Montréal</i>
Dr. Marcia Finlayson	<i>Co-Director, endMS National Training Program Chair of the endMS SPRINT Committee Queen's University</i>
Elisea De Somma	<i>SPRINT Alumni York University</i>
Dr. Ruth Ann Marrie	<i>University of Manitoba</i>
Dr. George S. Robertson	<i>Chair of the endMS Peer Review Committee Dalhousie University</i>
Dr. Jacqueline Quandt	<i>University of British Columbia</i>
Dr. Penelope Smyth	<i>University of Alberta</i>
Anik Schoenfeldt	<i>Manager, endMS National Training Program Research Institute - McGill University Health Centre</i>

2020 endMS Summer School Collaborators

Dr. Robert Carruthers	<i>2020 endMS Summer School Host University of British Columbia</i>
Michelle Eisner	<i>2020 endMS Summer School Coordinator University of British Columbia</i>

2020 endMS SUMMER SCHOOL

MS Bedside to Bench: A Primer in both MS Clinical Care & Roadmap for MS Research

We are so excited to welcome the next generation of endMS Summer School trainees back to Vancouver. We hope you will join us!

MEET YOUR HOSTS



Dr. Robert Carruthers is a neurologist and Clinical Associate Professor in Neurology who cares for people with Multiple Sclerosis, Neuromyelitis Optica and other autoimmune disorders of the central nervous system.

He has been a site investigator for seven clinical trials, caring for over 60 clinical trials participants. Dr. Carruthers is collaborating with imaging experts to develop imaging techniques that will improve clinical care and accelerate clinical trials in MS and related disorders.



Michelle Eisner served as coordinator of the Western Pacific endMS Regional Research and Training Centre (WPRRTC-BC/Sask) from July 2009-March 2015. Currently

she is the program coordinator for the UBC MS Connect Education Program where she works with a dedicated group of trainees, researchers and clinicians. The program holds various events and conferences to enhance the knowledge and skills of trainees with respect to Multiple Sclerosis and neuromyelitis optica. She is also a strong advocate for science education and has been working to connect high school students with researchers, clinicians and graduate students in order to inspire them to choose science – with her ultimate goal to build a strong research community.



When: June 15-18, 2020

Where: University of British Columbia

Applications: Call for applications will be announced in December



2019 endMS SUMMER SCHOOL



"Overall, the training program was great! The most meaningful sessions were the ones in which I was able to interact with people affected by MS, and with individuals with different careers (on the career panel). I enjoyed meeting trainees from various disciplines and networking with possible future collaborators."

- 2019 endMS SUMMER SCHOOL PARTICIPANT



"I was able to meet other MS trainees from across Canada and gain exposure to aspects of MS research and treatment that I normally do not encounter (including MRI, clinical neurology). It was also a very well-organized program that utilized our limited time very effectively."

- 2019 endMS SUMMER SCHOOL PARTICIPANT



ALUMNI UPDATES

Dr. Jenea Bin is currently a postdoctoral fellow in Professor David Lyons' laboratory at the University of Edinburgh. Her research focuses on understanding the cues that regulate myelination throughout life and following demyelination.

Dr. Courtney Casserly participated in the American Academy of Neurology Palatucci Advocacy Leadership Forum (PALF) in San Diego in July with the aim of advocating for treatments for NMOSD (Neuromyelitis Optica Spectrum Disorder) patients. She is the clinic director of a new "NeMo" clinic (Neuromyelitis Optica Spectrum Disorder and Myelin oligodendrocyte glycoprotein or MOG clinic) in London, Ontario. She is recruiting for her first investigator initiated trial, a pilot study looking at the use of Fampyra in people with MS who have had vision loss from damage caused by a previous optic neuritis. Her kids are now all grown up - 4 and 7! (Her youngest child was only 2 months old when she participated in the 2015 endMS Summer School in Montreal).

Dr. Pia Crone Christensen is entering her third and final year of her Innovation Foundation and Lundbeck 3-year postdoctoral position. Her position is a collaboration between Prof. Maiken Nedergaard, Center for Translational Neuromedicine, University of Copenhagen, and Jan Torleif Pedersen, PhD, at the Department of Circuit Biology at H. Lundbeck A/S, a Danish pharmaceutical company within the CNS area. She works on therapeutic monoclonal antibodies for neurodegenerative diseases, especially Alzheimer's Disease, with a focus on the glymphatic system.

Dr. Prenitha Mercy Ignatius Arokia Doss completed her PhD at Laval University under the supervision of Dr. Manu Rangachari. She is looking forward to doing a postdoctoral fellowship in neuroimmunology.

Dr. Miguel De Avila continues to work at Apotex as a technical specialist for the Global Active Pharmaceutical Ingredient (API) Direct Procurement Department, supporting sourcing decisions from third party API and excipient suppliers. In June, he welcomed his first daughter, Lucía.

Elisea De Somma is continuing her doctoral studies in Clinical Developmental Psychology at York University. Her research focuses on cognitive functioning and cerebellar white matter integrity in pediatric-onset multiple sclerosis.

Dr. Ben Ewanchuk successfully defended his PhD in Biochemistry at the University of Calgary in June 2019, under the supervision of Dr. Robin Yates. He is currently enrolled in medical school at the University of Calgary and is expected to graduate with a combined MD/PhD in 2022.

Dr. Afolasade Fakolade is completing a MS Society postdoctoral fellowship with Dr. Lara Pilutti at the University of Ottawa. Her project extends her doctoral work by developing and pilot testing a dyadic physical activity intervention for people with advanced MS disability and their support partners. She was awarded a pilot grant from the Consortium of MS Centers (co-PI and project lead) to carry out this work. She continues to be an active member of the Programs and Services Committee, MS Society Ottawa Chapter.

Dr. Marjan Gharagozloo competed her PhD at the University of Sherbrooke and began a postdoctoral fellowship in Dr. Peter Calabresi's lab at Johns Hopkins University in March 2019. She has been awarded an FRQS postdoctoral grant for a multidisciplinary project to discover the therapeutic potential of glucagon-like peptide 1 (GLP1) receptor agonists in multiple sclerosis.

Dr. Yohannes Haile continues to work as a scientific evaluator at Health Canada.

Dr. Heather Hanwell graduated with a Master of Public Health from the Dalla Lana School of Public Health at the University of Toronto in spring 2019. She is currently conducting mixed methods research on occupational health in the Faculty of Dentistry at the University of Toronto.

Dr. Rajiv Jain finished his PhD in Microbiology and Immunology at the University of Western Ontario in 2018. He has begun a postdoctoral fellowship with Dr. Wee Yong at the University of Calgary. The focus of Rajiv's postdoctoral work is to look at how B cells interact with CNS elements to promote MS pathology.

Dr. Camille Juzwik completed her PhD in May 2019, followed by a short clinical internship with Dr. Catherine Lubetzki at the Hôpital Pitié-Salpêtrière in France, having met Dr. Lubetzki through the endMS Network. The PhD ended with three novel publications with multiple current and former MSSOC researchers, discussing commonly dysregulated microRNAs across multiple neurodegenerative diseases (doi. 10.1016/j.pneurobiol.2019.101664); neuronal microRNA expression in EAE (doi. 10.1038/s41598-018-31542-y); and the neuroprotective role of miR-223 in EAE (doi. 10.1093/brain/awz245). Camille says that these publications were only made possible through the highly collaborative nature of the MSSOC. She is sad (but also incredibly excited) to be moving to New Jersey where she will be representing EMD Serono as a medical science liaison in MS.

Dr. Sébastien A. Lévesque has been working as a research associate for the Canada Excellence Research Chair at the University of Laval. He has worked on neural cell imaging using quantitative phase microscopy to discover novel biomarkers for psychiatric diseases. He recently moved to France due to family commitments and is currently seeking new challenges.

Dr. Sandra Magalhaes is a research associate at the New Brunswick Institute for Research, Data and Training, the provincial administrative data centre in New Brunswick. She leads a number of population based studies examining the epidemiology of various neurological diseases, including research focused on MS.

Dr. Keiko McCreary is the research ethics and compliance officer for the Office of Research and Innovation Services at the University of Lethbridge. She continues her involvement in MS as a member of the Board of Directors for the MS Society of Canada, Lethbridge & District Chapter. For the last two years, she has organized a 90-km cycling fundraising event, which has raised over \$10,000 to support MS research.

Sarah Neil is working as a genetic counsellor in medical genetics at BC Women's Hospital in Vancouver.

Dr. Evelyn Peelen is completing her postdoctoral fellowship. She worked at the Research Centre of the Centre hospitalier de l'Université de Montréal (CHUM) with Dr. Alexandre Prat. Her research focuses on how our defense system infiltrates our brain where it causes damage that results in the symptoms seen in MS.

Julie Petrin is working on completing her PhD this year. She is supervised by Dr. Marcia Finlayson at Queen's University. Her research focuses on access to healthcare services for Canadians living with MS.

Dr. Jason Plemel is an assistant professor at the University of Alberta. His lab has been in operation for over one year and is involved in projects that explore the role of microglia in remyelination and demyelination. The latter of which was recently funded by a CIHR project grant. Dr. Plemel is pleased with the growth of his lab.

For Summer School and/or SPRINT application and program guidelines, please visit our website at www.mssociety.ca/trainingprogram.

If you are interested in becoming a SPRINT mentor or would like more information on the program, please contact:

Anik Schoenfeldt, Program Manager
endMS Education and Training Office
514-843-1442 | 1-877-288-2570
anik.schoenfeldt@mail.mcgill.ca

or

Dr. Christina Wolfson, Program Director
endMS Education and Training Office
514-934-1934 ext. 44739
christina.wolfson@mcgill.ca

The endMS Research and Training Network is a nationwide initiative formed to accelerate discovery in the field of multiple sclerosis in Canada. Through innovative training and funding programs, the endMS Network aims to attract, train and retain MS researchers and increase opportunities to conduct MS research in Canada.

The endMS National Training Program is an initiative of the endMS Network. It is led by Dr. Christina Wolfson and funded by the MS Society of Canada through the MS Scientific Research Foundation.

