

Executive summary

The BC MS Cell Therapies Translational Research Network (MS Research Network) is a world-class research and patient-care hub, established with the **goal of using the latest advances in cell and gene engineering to develop, manufacture and test next-generation cell-based therapies**. The MS Research Network is made possible by a donation to the [University of British Columbia \(UBC\)](#) Faculty of Medicine and [Vancouver General Hospital \(VGH & UBC Hospital Foundation\)](#) for multiple sclerosis (MS) research



UBC Point Grey Campus

and care by a British Columbia (BC) based philanthropist who believes comprehensive contributions to science and medicine can quickly advance solutions and treatments across diseases for patients in BC, across Canada and around the world.

The MS Research Network will take a team science approach, drawing on integrative expertise across disciplines such as neurology, immunology, biomedical engineering, regenerative medicine. The Network administration is a partnership between UBC [Faculty of Medicine](#), the [School of Biomedical Engineering](#) and the [Djavad Mowafaghian Centre for Brain Health](#).

The UBC Faculty of Medicine is actively recruiting three faculty members to support this program: A global leader (UBC Chair) who will establish an ambitious research program and lead the integration of relevant expertise across the province to drive the development of novel cell therapies for MS, and two biomedical engineers with complementary expertise who will be active members of the MS Research Network and work closely with the UBC Chair to advance therapeutic discoveries.

We are looking for early and/or mid, and advanced career candidates for the following faculty positions that are open to all applicants with a PhD, and/or MD, or equivalent academic qualifications:

- One established investigator ([Professor](#)) with expertise in MS and experience in immunotherapy and/or cell therapy
- One emerging investigator ([Assistant or Associate Professor](#)) with expertise in neuro-engineering*
- One emerging investigator ([Assistant Professor](#)) with expertise in immuno-engineering*

**For appointments to the School of Biomedical Engineering, individuals with quantitative science backgrounds such as Math, Computer Science, or Physics are also encouraged to apply if they are eligible for a [Limited Licence with Engineers and Geoscientists BC](#).*

Through these recruits, we will gain the scientific perspectives, capabilities and leadership needed to apply what we have done for cancer immunotherapy to MS. We hope to create a ripple effect throughout BC's entire research ecosystem, resulting in new relationships that will attract outstanding staff and trainees to the MS Research Network, cross-fertilize ideas across and accelerate innovation for the benefit of persons/people with MS (PwMS) and beyond.

Background

Canada has one of the highest rates of MS in the world, with more than 4,000 people newly diagnosed each year. Despite UBC being a powerhouse of biomedical research, most PwMS in BC whose lives may depend on next-generation therapeutics do not benefit from the University's discoveries. Addressing the gaps between discovery research and first-in-human trials that exist in BC would accelerate the development, manufacturing and testing of new disease-modifying therapies for MS, bringing new treatments to patients faster and building capabilities to make them safer and more effective.

Situated within BC's thriving biomanufacturing and life sciences ecosystem, the MS Research Network will benefit from and leverage capabilities established through [UBC's Academy of Translational Medicine](#) and our recently announced national research hub, [Canada's Immuno-Engineering and Biomanufacturing Hub](#), a UBC-led coalition of 50+ multi-sectoral partners (academic, private, public and not-for-profit organizations from across Canada and internationally) with a vision to become a global epicentre for developing and manufacturing next-generation immune-based therapies in response to pandemics and other health threats. There has never been a more exciting time to join this vibrant, collaborative ecosystem.

BC has a flourishing life sciences research and biotechnology sector anchored by academic research that collectively represents an outstanding opportunity to develop a pipeline of advanced therapies – including cell, gene and other immunotherapies. Developed in close consultation with industry and academia, the [BC Life Sciences and Biomanufacturing Strategy](#) is a vision for the future that addresses the challenges we face today by investing in new talent, infrastructure and clinical trials to attract industrial production opportunities and grow into a world class hub of innovation. The MS Research Network aligns with this strategy and will help fill critical gaps in BC's health research capacity, while accelerating the translation of advanced therapeutics into timely treatments for patients.

“Research is care,” says Heidi Scott, a patient at the UBC Hospital MS Clinic in the Djavad Mowafaghian Centre for Brain Health. “My hope is that this investment will help integrate research into clinical care in hospital and community settings so that more patients have the option to be involved in research that contributes to improved therapeutics.”

Program vision

Our goal is to use the latest advances in cell and immuno-engineering in autoimmunity to develop, manufacture and test cell-based therapies with the potential to transform patient care and experiences in BC and beyond. The MS Research Network will collaborate with research partners across the province, country and globe to leverage advancements with the potential to improve outcomes for PwMS and other autoimmune diseases. It will also help augment clinical services for patients and their families.

PwMS need access to innovative treatment options and new technologies that are based on the latest research. The donor's bold vision centres around the patient perspective and challenges UBC to transform the care of PwMS in BC by building this Network around the development of novel cell-based biotechnologies. The MS Research Network strives to deliver innovative, lifesaving therapies that have the potential to make life better for PwMS.

Over a 5-year period, we will establish a Network that aspires to lead Canada and the world in MS cell therapy research, innovation and treatment by bringing together the people and building the infrastructure needed to:

- provide PwMS in BC with a clear path toward cutting-edge research;
- develop MS-specific cell therapy clinical trial capabilities;
- develop and manufacture novel disease-modifying therapeutics for MS, such as cell-based therapies;
- test those products in first-in-human trials;
- enable rapid acceleration of these therapies to move through the development pipeline faster;



AI-generated image of neurons

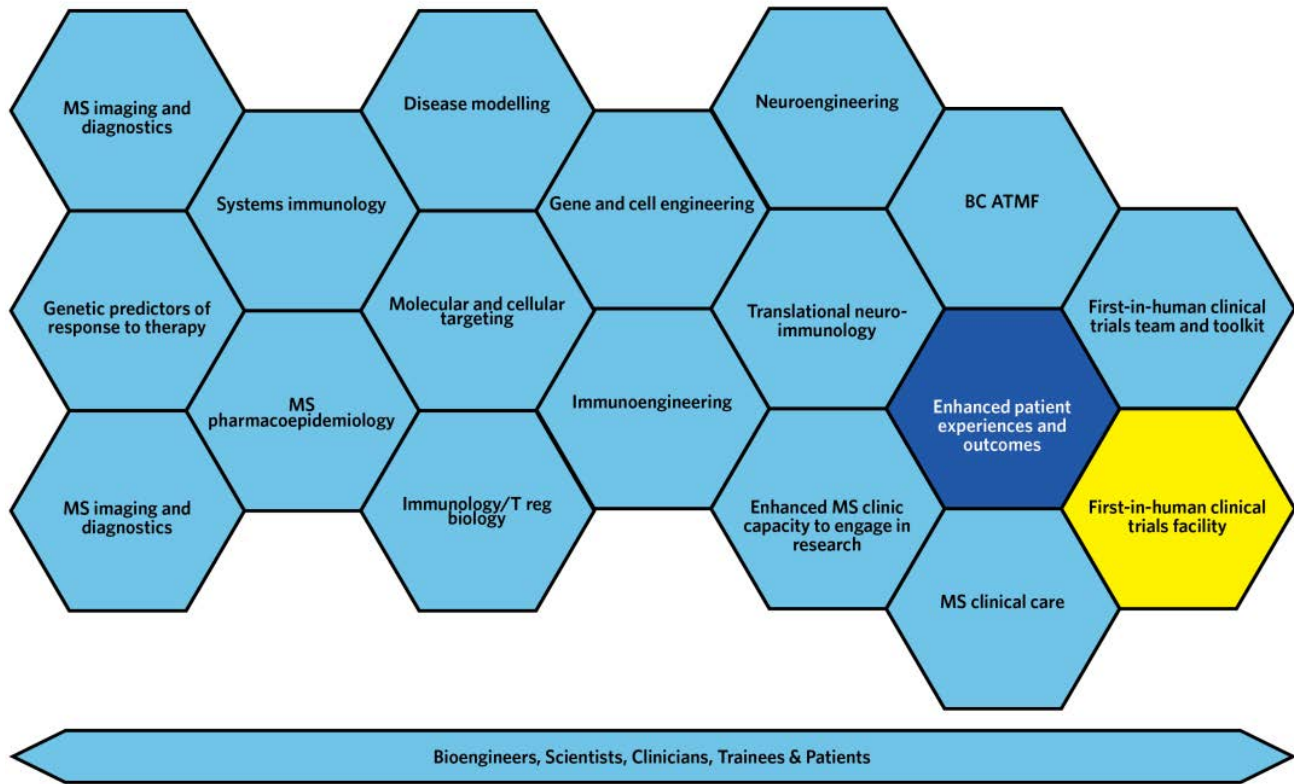
- develop cell therapy capabilities that will benefit other neurological and autoimmune diseases; and
- train the next generation of bioengineers, scientists, and clinicians who will continue this legacy in BC and globally.

The gift will support recruitment of world-class researchers and biomanufacturing infrastructure for an in-house GMP facility for the development and clinical testing of homegrown cell and gene therapies.

This initiative will catalyze a diverse community of patients, bioengineers, scientists, clinicians and trainees who are inspired to work together to advance our shared goal to transform MS patient care.



The three pillar leads of the MS Research Network from left to right, Dr. Peter Zandstra, Dr. Megan Levings and Dr. Anthony Traboulsee



Network goal: To use the latest advances in cell and gene engineering to develop, manufacture and test cell-based therapies with the potential to transform the MS patient care and experience in BC.

In the 3-minute video below, some of the key leaders behind the MS Research Network discuss the exciting future of MS treatments and showcase the donor's vision: [Watch the video.](#)

Program governance

The MS Research Network is overseen by committees (Scientific Pillar Leads, Steering Committee, International Scientific Advisory Committee, Finance Committee, Annual Review Council) with representation from global representatives, UBC Leadership from the [Faculty of Medicine](#), [School of Biomedical Engineering](#), [the Djavad Mowafaghian Centre for Brain Health](#), and [Vancouver Coastal Health](#) (VCH).

UBC at a glance

The University of British Columbia is a world-leading centre of teaching, learning and research excellence. UBC transforms personal initiative into innovation, and new ideas into impact and is consistently ranked among the top 20 public universities in the world. At UBC, bold thinking is given a place to develop into ideas that can change the world. The MS Research Network aligns with the overall UBC Faculty of Medicine's [Strategic Plan for 2021-2026, Building the Future](#).

UBC's Vancouver campus is located at the western tip of the Point Grey Peninsula. More than 400 hectares in size, the stunning campus is surrounded by forest on three sides and ocean on the fourth and is just a 30-minute bus ride to Vancouver's downtown core. The campus has been located on this site for most of its 100-year history; a location that is the traditional territory of the Musqueam people.

Facts & figures



\$733.7 million in research funding for **10,218 projects** and **245 companies** spun off from UBC research



Over 375,000 alumni living in **160 countries**; **18,953 faculty and staff**

1,436 research projects with industry partners

UBC operates a **\$3.4 billion annual consolidated budget**

Total students on campus **70,757**

1,350 research contracts and agreements with government and non-profits

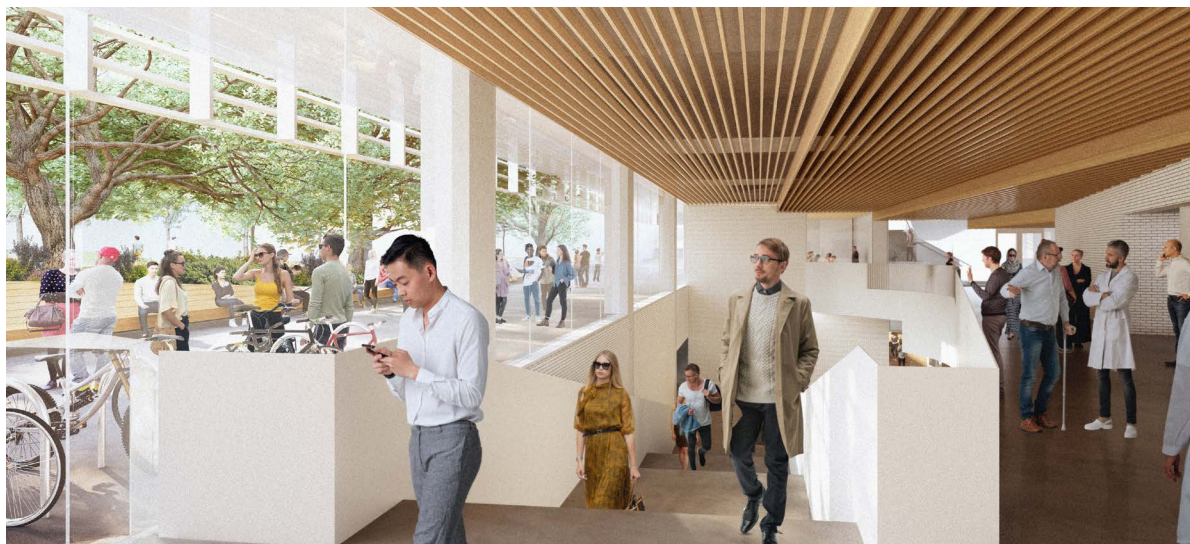
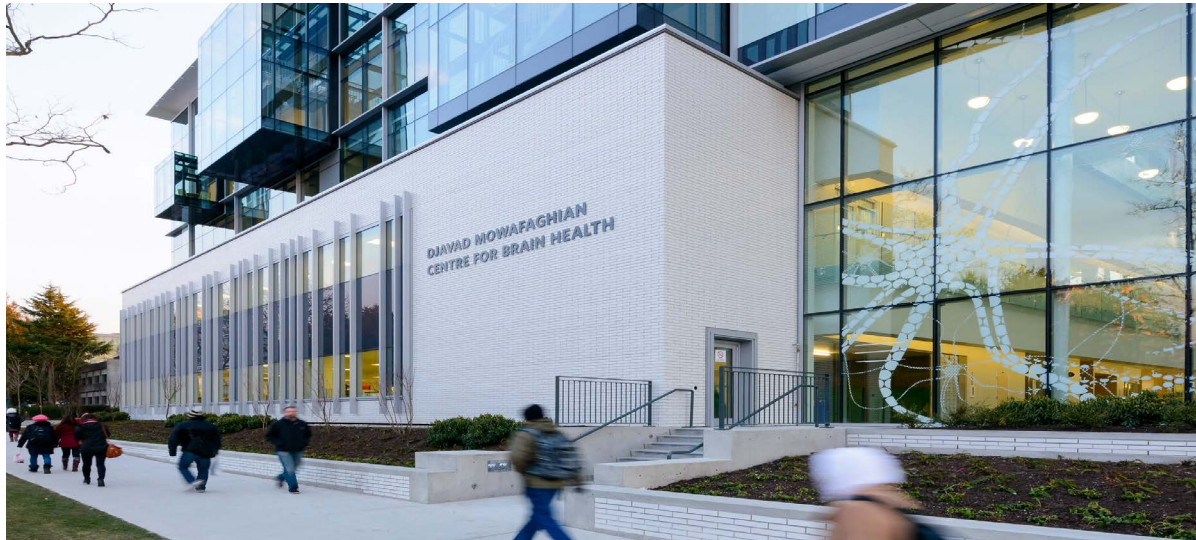
World-class, modernized facilities

The [Djavad Mowafaghian Centre for Brain Health](#) brings together experts in the fields of neuroscience, neurology, psychiatry and rehabilitation in a hub for training, research, and clinical care. The Centre's philosophy is to work with all facets of brain health as knowledge gained from treating and investigating one disease of the brain will advance our understanding of others. The Centre in partnership with UBC Faculty of Medicine and VCH, brings research closer to patients, providing British Columbians with better access to the best possible treatments. The [UBC Hospital MS Clinic](#) is a national clinical trial centre for new pharmaceutical therapies, imaging research, advanced genetics and immunology research. They have a multidisciplinary clinical team approach and work closely with imaging scientists and basic scientists, all searching for new, innovative ways to diagnose and treat MS and Neuromyelitis Optica (NMO).

The [School of Biomedical Engineering \(SBME\)](#) is a partnership between the Faculties of Medicine and Applied Science, acting as a nucleus for education and training, research and innovation in biomedical engineering, creating new knowledge, new academic and training programs and fostering translation and innovation. Its vision is to transform health care outcomes through unconstrained exploration of the best possible integrative solutions across engineering, medicine and biology. Through collaborative and interdisciplinary approach and building on UBC academic and research excellence, the School of Biomedical Engineering aspires to be a global leader in biomedical engineering research, education and translation.

A new [SBME building](#) will reflect the ever-shifting nature of medical innovation itself. Makerspaces and "wet" and "dry" laboratories will be built on a grid; lab space will be flexible and realigned according to the demands of a given medical challenge. As a new home for industry, academia and hospital partners, shared spaces will be designed for collision, connectivity and collaboration between all stakeholders from student to entrepreneur to clinician. Biology, medicine and engineering can all be reshaped at once. A modernized SBME building will make this possible while providing students and faculty with the experience of a unique, educational world without technological or scientific boundary.

The Centre for Brain Health and SBME are just two buildings that make up the Faculty of Medicine's Health Precinct, a cluster of buildings in close proximity where researchers can collaborate in innovative, adjacent spaces to break down silos and increase the opportunities for inter-disciplinary exchange. The [UBC Life Sciences Institute](#), [Michael Smith Labs](#), and the [UBC Pharmaceutical Sciences building](#) are also nearby.



The Centre for Brain Health, top, and an interior rendition of the new SBME building, bottom

Promoting equity, diversity and inclusion

UBC is working to build a community in which human rights are respected, and equity, diversity and inclusion (EDI) are embedded in all areas of academic, work and campus life. We believe that sustained excellence in research, education and engagement depends on the integration of diverse perspectives and approaches and the inclusion of those who have been historically, persistently or systemically marginalized. For more information on the University's commitment to EDI, please see the [EDI support resources](#) put together by the Office of the Vice-President, Research and Innovation.

Faculty of Medicine at a glance

Ranked among the world's top medical schools with the fifth-largest MD enrollment in North America, UBC's [Faculty of Medicine](#) is a leader in both the science and the practice of medicine. Across British Columbia, more than 12,000 faculty and staff are training the next generation of doctors and health care professionals, making remarkable discoveries and helping to transform health for everyone at home and around the world.

As a unique institution in BC, the UBC Faculty of Medicine provides innovative educational and research programs in the areas of health and life sciences through an integrated and province-wide model. The Faculty of Medicine works with many collaborating institutions including BC's six health authorities, the [University of Victoria](#), the [University of Northern British Columbia](#), [UBC's Okanagan campus](#) and others to deliver on its provincial mandate around education and research.

Strategic plan - Faculty of Medicine, *Building the Future*

As British Columbia's only Faculty of Medicine, we are rising to the challenge of training the next generation of health professionals and researchers in a system that is evolving in real-time. To ensure we meet the demands of today and tomorrow, we must strengthen and integrate our operations and systems to inspire innovation and agility, enabling a person-centred approach to health care that is excellent, equitable, engaged, and effective.

Our vision is to transform health for everyone. As an internationally leading Faculty of Medicine, we put people, patients, families and communities at the centre of our work. It's about creating pathways to better health and well-being in communities at home and around the world, for everyone— regardless of age, ethnicity, gender, sexual orientation, location, socioeconomic means or ability. Our mission, health through knowledge and innovation, provides focus in our efforts to achieve this vision. Learn more in our [Vision: Transforming Health for Everyone video](#).

In our updated strategic plan, "[Building the Future](#)," we articulate the commitments, principles, goals and objectives that will propel us forward. The new plan will build upon Faculty successes in training the next generation of health professionals and developing focused areas of research pre-eminence; and it will enable the Faculty, and the University, to deepen and extend our leadership role in shaping British Columbia's health system and contributing to the knowledge economy of the province.

"Building the Future" outlines four transformative goals that will strengthen our capacity to meet today's challenges, and establish a platform for excellence and innovation for the future:

- Education: to educate, develop and mentor future and current health practitioners, educators and researchers who can work together effectively to serve evolving health needs.

- Research: to create, translate, and implement knowledge at scale across all research areas to increase global impact and promote improved individual and population health.
- Organization: to cultivate a respectful, inclusive and discrimination-free organizational culture with systems that support everyone in achieving their fullest potential.
- Partnership: to advance health system alignment through collaboration to shape practices and policies that improve the health and well-being of people and populations.

Our strategic plan reaffirms the fundamental premise of social accountability—the foundation of our contract with society. In addition, this plan introduces a new and complementary contract: a contract with ourselves. This contract speaks to our individual and collective commitment to transform our organizational culture through our own behaviours and the ways we treat one another. Our commitment to creating an inclusive culture where creativity and innovation can flourish is central to achieving excellence in research and education. It is through this excellence that we can fulfil our commitments to society by educating and training a diverse group of learners who can meet the health needs of people and populations.



Dr. Megan Levings and her team are developing cell therapies that could one day be used to treat MS and other autoimmune diseases.

Facts & figures - Faculty of Medicine

Full-time faculty	657*
Clinical faculty	10,483*
Staff	2,000+
Trainees	4,500+
Entry-level positions	1,335
MD graduates	288
Health professional under graduates	43
Family medicine residents	169
Generalist and specialist residents	177
Graduate health professionals	183
Master's and PhD students	475
Training sites across BC	80+

For more information on the Faculty of Medicine, visit: www.med.ubc.ca.

2017/18 numbers

*October 2020

About Vancouver, BC

Vancouver is one of the most livable cities in the world. It's consistently ranked near the top of renowned lists such as the Economist's "most livable cities," Mercer's Quality of Life Survey's top five, and Siemen's Greenest Cities in the World list. Vancouver's economic prosperity is impressive, and it's projected to have one of the fastest-growing metropolitan economies in Canada.



Whistler, BC, nearby Vancouver

Thriving economic gateway

Vancouver serves as a crucial gateway for pan-Pacific trade due to its status as home to Canada's largest port, attracting numerous companies that headquarter here. Key economic sectors in Vancouver include international trade, finance, natural resources, education, technology, film, and tourism.

Vancouver is renowned for its high-quality post-secondary institutions, such as the UBC, Simon Fraser University, and the British Columbia Institute of Technology.

Vancouver's natural surroundings provide limitless options for outdoor activities, including hiking and mountain biking in the spring or world-class skiing in the winter at the nearby Whistler-Blackcomb Resort. Additionally, Vancouver offers hockey, boating, exceptional shopping and dining, vibrant festivals and concerts.

With a population of 2.6 million, Metro Vancouver is one of the largest metropolitan centers in Western Canada, making it an exceptionally dynamic place to reside and pursue a rewarding career. Visit www.hellobc.com and www.tourismvancouver.com to learn more.

Appendix: Candidate profile criteria

Qualifications	UBC Chair (Tenure) in Cell Therapies for MS and Autoimmune Diseases	Assistant Professor (Tenure track) or Associate Professor (Tenure) in Molecular and Cellular Bioengineering	Assistant Professor (Tenure Track) in Immuno-Bioengineering
Education	PhD, and/or MD or equivalent	PhD or equivalent*	Ph.D. or equivalent*
Innovative Research Leaders	Innovative research program in the neuro-immune axis and MS, cell therapy or immunotherapy with expertise in neuroimmunology and/or immunology	Original, innovative research program of high quality and novelty, and having potential to attract, develop and retain excellent trainees, students and future researchers.	
		Bioengineering, bio-medical engineering, neuro-engineering, stem cell engineering, and/or related fields	Immuno-engineering, bioengineering, bio-medical engineering, and/or related fields
Strategic Vision	Build a world-class research program that aligns with the strategic priorities and shared vision of the donor and the Faculty of Medicine	Build an independent research program with potential to achieve international recognition in their field that aligns with the strategic priorities and shared vision of the donor and the Faculty of Medicine	

<p>Strong Educators</p>	<p>Full Professors - demonstrated evidence of excellence in teaching with potential to attract, develop and retain excellent trainees, students and full researchers.</p> <p>Associate Professors - demonstrated evidence of successful teaching and ability to direct graduate students, and evidence of sustained and productive scholarly activity.</p> <p>Assistant Professors - demonstrated evidence of ability in teaching, and scholarly activity and will be expected to participate in the undergraduate, graduate and postgraduate teaching activities of the unit.</p>
<p>Collaborative Approach</p>	<p>Demonstrated track record of working with and building diverse teams of experts. This experience might have been gained through large-scale grants, consortium, national/international research collaborations, cross-disciplinary institutes, or other relevant examples. Strong skills in facilitating and supporting research, scholarship and impact across a range of fields.</p>
<p>Commitment to Equity, Diversity and Inclusion</p>	<p>The successful candidate will have demonstrated ability to effectively communicate and interact with empathy. They will also bring experience with, and a commitment to, working equitably with faculty, staff, students and patient populations from diverse backgrounds and lived experiences, in alignment with UBC Faculty of Medicine's commitment to respectful and inclusive work environments.</p>

**Consideration will be given to candidates who hold a P.Eng. licence or who are eligible to obtain a P.Eng. license and consequently register for one with Engineers and Geoscientists BC. Individuals with quantitative science backgrounds such as Math, Computer Science or Physics are also encouraged to apply if eligible for a [Limited Licence with Engineers and Geoscientists BC](#).*