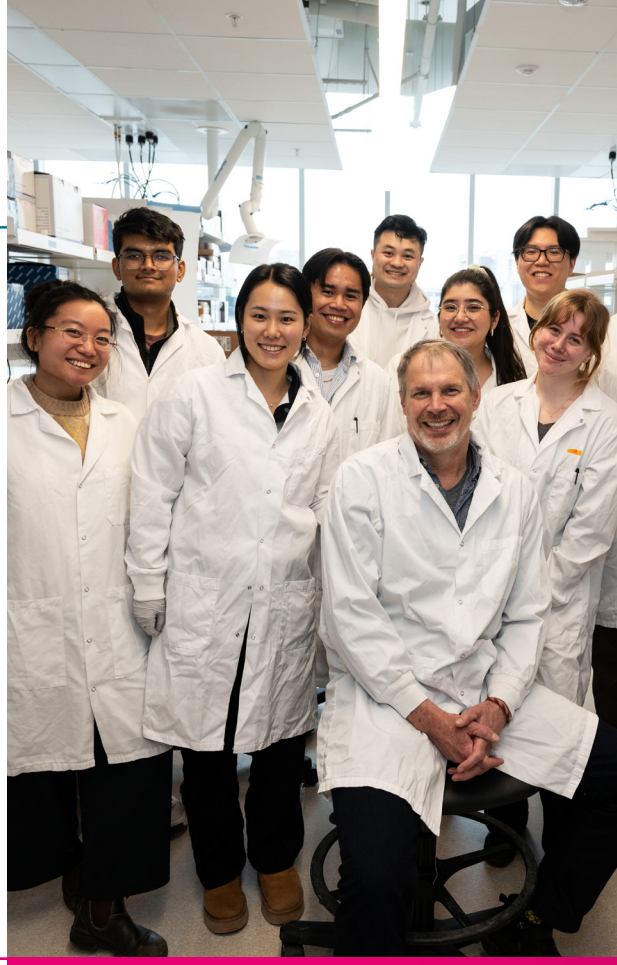
Stem Cell Network | Réseau de Cellules Souches

Powering Regenerative Medicine
Propulsons la médecine régénératrice

BRITISH COLUMBIA BY THE NUMBERS



SCN REGIONAL PROFILE

For nearly 25 years, SCN has led the way in building national capacity in stem cell and regenerative medicine by supporting world-class research and empowering leading researchers and trainees from coast to coast.

Stem cell and regenerative medicine researchers in **British Columbia** are making important advancements in areas such as diabetes, lung disease, cardiac disease, cancer and muscular dystrophy.

FUNDS INVESTED IN BC RESEARCH

$11,689,913

48 TOTAL PROJECTS FUNDED

2 CLINICAL TRIALS FUNDED

32 INVESTIGATORS SUPPORTED

3 INSTITUTIONS SUPPORTED

MATCHING FUNDS FROM PARTNERS

$27,436,232

916 BC TRAINEES SUPPORTED

Data from 2016 onward

DISEASES OR ILLNESS AREAS SUPPORTED

- DIABETES
- CYSTIC FIBROSIS
- **CARDIAC DISEASE** including atrial fibrillation and hypertrophic cardiomyopathy
- **CANCER** Including blood and breast
- MUSCULAR DYSTROPHY
- **OTHER DISEASES** Muscle, Liver, Neural and Ocular Diseases

WATCH US IN ACTION

STEMCELLNETWORK.CA

TOWARDS A CURE FOR DIABETES WITH BIOPRINTED TISSUE THERAPEUTICS:

ASPECT BIOSYSTEMS

Photo provided by Aspect Biosystems

Aspect Biosystems is a Vancouver-based biotechnology company focused on developing Bioprinted Tissue Therapeutics (BTTs) that are designed to replace, repair, or supplement biological functions in the body.

Led by Founder & CEO Tamer Mohamed, Aspect is creating these next-generation cell therapies by applying its full-stack tissue therapeutic platform, which integrates proprietary AI-powered bioprinting technology, computational design tools, therapeutic cells, and advanced biomaterials.

In early 2020, Dr. Timothy Kieffer, at the University of British Columbia, was awarded $500,000 by SCN for a collaboration with Aspect Biosystem to advance Aspect's implantable 3D bioprinted cell therapy for delivering insulin-producing cells to treat type 1 diabetes - a chronic disease affecting more than 300,000 Canadians. This research award allowed Dr. Kieffer's lab and Aspect Biosystems to join forces in building a data package to prove the science.

That data set later played a key role in Aspect securing a US$2.6 billion deal with Novo Nordisk in April 2023. The Aspect-Novo Nordisk collaboration is initially focused on developing pancreatic BTTs designed to maintain normal blood glucose levels without the need for immunosuppression, a potentially transformative treatment for people living with type 1 diabetes.

FOUNDED: 2013

OF EMPLOYEES: 100+

LOCATION:
Vancouver, BC

MOST RECENT INVESTMENT:
US$115 million
Series B financing

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The Stem Cell Network (SCN) is a national not-for-profit that funds stem cell and regenerative medicine (RM) research; trains the next generation of talent; enables knowledge mobilization of research; and enhances the commercialization readiness of stem cell and RM innovations. From the lab to the clinic, the SCN community is connected by a common vision: to transform lives through regenerative medicine.

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MODELING TYPE 1 DIABETES WITH STEM CELLS TO

UNLOCK NEW TREATMENTS

Type 1 diabetes (T1D) is an autoimmune disease where the immune system mistakenly attacks the insulin-producing cells in the pancreas. Although promising new treatments are being developed—like cell replacement and immune therapies—a key challenge is the lack of reliable models to test these therapies on human cells.

Dr. Megan Levings' research team is creating a lab-grown model of T1D using stem cells to produce the three key cell types involved: insulin-producing cells, T cells, and antigen presenting immune cells. By combining these, her team recreates the disease process in the lab.

This model will enable researchers to better understand how T1D develops and test new treatments more effectively. It has the potential to accelerate the development of innovative therapies that could prevent or treat T1D, improving the lives of people living with this disease.

"By building a 'mini-immune system' in the lab that mimics type 1 diabetes, we can study this complex disease in ways never before possible. Our goal is to help pave the way for new, effective treatments that can prevent or one day cure T1D."

Dr. Megan Levings
Professor, University of British Columbia

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