

# Powering Canada's Biotechs

## The women behind two of Canada's innovative biotech start-ups

**TRADITIONALLY POWERED BY STEM CELLS, REGENERATIVE MEDICINE (RM) FOCUSES ON REPLACING, REPAIRING OR REGENERATING HUMAN CELLS,** tissues and organs. In the coming decade, regenerative medicine therapies and technologies will improve and transform health for all as researchers work to deliver innovative treatments with improved patient outcomes. Canada is home to several leading-edge companies in the RM field, with many emerging companies joining the ranks recently such as Notch Therapeutics, Mesintel Therapeutics, Aspect Biosystems, and AmacaThera Inc.

For its part, Canada's Stem Cell Network (SCN) has been leading the way in building national capacity in stem cell and RM research, supporting the commercialization of RM research and early-stage biotechnology companies through its Fueling Biotechnology Partnerships Program and training early-career researchers. Recently, SCN had the opportunity to speak with two inspiring women in biotech about their career journeys and how their companies are making a difference for Canadians.

### ACCELERATING THE DEVELOPMENT OF INNOVATIVE THERAPIES FOR LIVER REGENERATION

From 10 years of age, Dr. Lesley Hill, Co-founder and Chief Operating Officer of Mesintel Therapeutics, would tell people that she was going to find a cure for cancer when she grew up, which at the time, to a burgeoning young scientist, meant becoming a physician.

"During my undergrad, I realized that many groundbreaking treatments come from lab-based research," said Dr. Hill. "One of the most exciting, and surprising, aspects of my post-doctoral fellowship, was that I had the opportunity to become a co-founder in a biotech start-up."

Mesintel Therapeutics focuses on fibroblasts, a cell type that has vital roles in health, and their dysfunction underlies numerous diseases with unmet medical needs, including cancer and fibrosis. Mesintel has developed a platform to accelerate the discovery of novel therapeutics for these diseases. The platform is also being leveraged in complementary therapeutic areas, including rare diseases, tissue regeneration and aging. The liver regeneration program is a high priority for Mesintel and is expected to significantly improve millions of lives globally.

"The Fueling Biotechnology Partnerships award from the Stem Cell Network is playing a huge role in supporting our company to develop therapies to improve liver

regeneration," said Dr. Hill. "With liver disease quickly reaching epidemic proportions, new approaches are desperately needed to improve liver health."

Mesintel is decoding fibroblast biology at an unprecedented pace. The discovery platform has already yielded foundational insights into fibroblast dysfunction, their role in disease, and new therapeutic targets. The ongoing incorporation of more sophisticated computational approaches, including machine learning, is accelerating Mesintel's discovery and development programs, enabling the creation of superior therapeutics.

### MAKING STEM CELL THERAPY MAINSTREAM

For Dr. Emily Titus, Senior Vice President, Notch Therapeutics, her career path has been about passion and



Dr. Lesley Hill, Co-founder and Chief Operating Officer of Mesintel Therapeutics

Created in 2001, with support from the Government of Canada, the Stem Cell Network has grown from a few dozen labs to more than 230 world-class research groups, supporting over 225 research projects and more than 25 clinical trials. Since its inception, over 20 biotech companies have been catalyzed or enhanced and more than 5,000 highly qualified personnel have been trained. [stemcellnetwork.ca](http://stemcellnetwork.ca)



A snapshot of some of the biotech start-up companies catalyzed or enhanced through SCN

building a fulfilling career – one with impact. After completing a Bachelor of Applied Science, Emily transitioned to the field of pluripotent stem cell biology. Following her PhD, she landed her first job at the then



Dr. Emily Titus, Senior Vice President, Notch Therapeutics

newly launched Centre for Commercialization of Regenerative Medicine (CCRM).

"A turning point in my career came when I had the opportunity to focus on new areas of CCRM's business, including the formation of companies," said Dr. Titus. "One of my projects was the predecessor of Notch Therapeutics."

Notch Therapeutics is developing a pipeline of allogenic T cell therapies from induced pluripotent stem cells, specifically engineered to address the underlying biology of complex diseases, including cancer, and overcome the limitations of autologous therapies. The goal is to make T cell therapies accessible to more people, creating an off-the-shelf medicine that ultimately offers transformational health benefits over the existing standards of care in cancer.

"The Stem Cell Network was integral to my early career," said Dr. Titus. "As a trainee I was sponsored to attend the annual Till and McCulloch Meeting. It was a great introduction into Canadian stem cell and RM science and allowed me the opportunity to interact and network with peers."

Since its inception, Notch has grown to a company with 80 staff at three sites: Toronto, Vancouver, and Seattle. Support and belief in the technology from the founding institutions in Canada made Notch a reality and the company looks forward to revolutionizing the landscape of T cell therapies for the benefit of Canadians.

