

Company Name:	Allarta Life Science	Company Areas of Focus:	Biomanufacturing, Cell Production, Bioengineering/biomaterials, Organoid production/transplantation, Exosomes/extracellular vesicles, 3D printing
Location: Hamilton, ON			
Internship Description:			
Allarta is a pre-clinical life science company developing proprietary cell encapsulation technology to enable cell-based therapies. The internship project focuses on the delivery of pluripotent stem cell-derived cells such as beta cells as well as other cell types, to replace lost or diseased cells, in pursuit of cell replacement therapies.			
Essential skills required to undertake this internship:			
The candidate demonstrates experience in most of the following aspects: ability to follow standard operating procedures and maintain a clean, safe, and orderly work environment, maintaining clear and rigorous experimental records, create experimental reports, be adaptable and agile when faced with competing priorities, and experience working in a highly interdisciplinary and collaborative environment. Experience in cell culture, microscopy, and 3D printing is an advantage.			
Skills that a prospective intern will learn:			
Allarta provides direct exposure for this role to 2D and 3D cell culture, advanced microscopy, cell characterization (e.g., histology), live/dead assays, metabolic assays, ELISA, assay design and development, and our proprietary encapsulation technology.			
Company Name:	Aspect Biosystems Ltd.	Company Areas of Focus:	Biomanufacturing, Bioengineering/biomaterials, 3D printing
Location: Vancouver, BC			
Internship Description:			
To work on the strategic design and development of our therapeutic cell platforms (e.g. polymer process development). They will make major scientific, laboratory-based contributions to our preclinical research and development programs and work with a leading team of researchers including cell biologists, biomaterials experts, and engineers.			
Essential skills required to undertake this internship:			
(1) MSc or PhD in tissue engineering, biomedical engineering, chemistry, materials science, biochemistry, or similar discipline. (2) Previous work experience executing research and development in a wet lab setting and ideally have experience in a synthetic chemistry lab. (3) Experience with mammalian cell culture and 3D cell culture.			
Skills that a prospective intern will learn:			
<ul style="list-style-type: none"> • Industry lab skills (sterile technique, pipetting etc.) • Experimental design and execution skills • Experimental record keeping, reporting, and presentation skills • Become an expert user of Aspect's microfluidic bioprinting technology 			
Company Name:	Axolotl Biosciences	Company Areas of Focus:	Biomanufacturing, Bioengineering/biomaterials, Organoid production/transplantation, 3D printing, Reagent production
Location: Vancouver, BC			

Internship Description:			
Research and development of HeartPrint Bioink. The intern will work with Axolotl to optimize our bioink for 3D printing cardiac tissue. They will learn about quality control, stability testing, and 3D bioprinting. They can also work with our business development team to learn about marketing and other business opportunities.			
Essential skills required to undertake this internship:			
Experience with cell culture and biomaterials			
Skills that a prospective intern will learn:			
3D bioprinting, biomanufacturing, marketing, fundraising			
Company Name:	Cryostasis Inc.	Company Areas of Focus:	Biomanufacturing, Cell Production, Reagent production, Extended duration storage systems
Location: Ottawa, ON			
Internship Description:			
The development of media and hardware to extend the usable life of regenerative medicine products in an unfrozen state for up to 14 days.			
Essential skills required to undertake this internship:			
Cell culture, PCR, HE and PAS microscopy			
Skills that a prospective intern will learn:			
Cell culture, fluorescent microscopy techniques, compounding media for clinical use, clinical trials, novel storage methodologies that will train them for a research scientist position.			
Company Name:	Jenthera Therapeutics	Company Areas of Focus:	Gene Therapy, Immunotherapy
Location: Saint-Laurent, QC			
Internship Description:			
Test and evaluate the performance of Stem Cell reprogramming of our proprietary gene editing complexes (GEC).			
The project will involve test and evaluation of GEC for stem cell reprogramming. Our GECs are CRISPR ribonucleoproteins engineered to deliver through cell receptors. In the context of stem cell reprogramming a number of our GECs have been developed and delivery to cells remains to be optimized such that a lead can be selected. Functional test of delivery, editing and phenotypic characterization are part of the process of our GECs optimization. Trainee will be expected to deliver written and oral reports, perform challenging laboratory work and data analysis. Exposure to CRISPR will expose the trainee to evaluation methods as well as refining their knowledge of protein engineering.			
Essential skills required to undertake this internship:			
<ul style="list-style-type: none"> • Working knowledge and use of CRISPR in some format, preferably mammalian cells • Experience of work with or knowledge of reprogramming methods for iPSC • Demonstrable bench skills in cell culture, immuno-assays and flow cytometry. 			
Skills that a prospective intern will learn:			
<ul style="list-style-type: none"> • Presentations • Multi-parameter optimization • Data analysis method • Molecular biology - transcriptomic, proteomic analysis 			

Company Name:	Mediphage Bioceuticals	Company Areas of Focus:	Biomanufacturing, Gene Therapy, Immunotherapy
Location: Toronto, ON			
Internship Description:			
<p>We are a gene therapy platform actively working on different modalities and applications of our novel DNA vector named as ministring DNA (msDNA).</p> <p>We have four different verticals such as gene therapy, gene editing, DNA vaccines, and viral vector bio manufacturing.</p> <ul style="list-style-type: none"> On gene therapy and gene editing verticals, we are mainly focusing on genetic therapeutics development and transient or permanent gene therapy/editing, mainly in CNS and liver oriented disorders. On viral vector bio manufacturing, we are expanding our portfolio to develop raw material to boost up the efficacy of AAV vector manufacturing 			
Essential skills required to undertake this internship:			
Cell cultures, pipetting, media and buffering preparations, PCR, cell lysis, DNA and proteins extraction, cell maintenance, aseptic techniques, electrophoresis, and working in biohazard level I and level II laboratory			
Skills that a prospective intern will learn:			
<p>The trainee will directly work with highly skilled senior scientists. Pending upon the type of assigned project, they will develop technical skills such as industrial upstream and downstream manufacturing, gene editing via homologous recombination and CRISPER/Cas technology, transfection, analytical assays, chromatography, fluorescent microscopy, gene and protein expression analysis, flow cytometry, and many more molecular and cell biology techniques.</p> <p>In addition, the trainee will develop soft skills such as project management, self-management, critical thinking, business writing, cross department communications, time management, business and technical presentations, and many more.</p>			
Company Name:	Mesintel Therapeutics Inc.	Company Areas of Focus:	Immunotherapy, -Omics, Drug screening
Location: Vancouver, BC			
Internship Description:			
<p>The internship project will involve four major components: 1) execution of unique high-throughput screens to identify modifiers (candidates) of mesenchymal progenitor biology; 2) integration of screen-derived candidates with existing datasets (including RNA-seq and single cell omics); 3) assessment of the patentability and translation potential of identified candidates for a variety of clinical indications; and 4) participation in developing a business case for specific candidates, enabling their advancement towards the clinic. In this manner, the intern will have an opportunity to build on their experimental skills, but will also receive training in how targets and associated molecules are vetted and prioritized for subsequent pre-clinical development.</p>			
Essential skills required to undertake this internship:			
Required skills for this internship include: 1) experience with tissue culture; 2) familiarity with routine molecular and cellular biological experiments (i.e., qPCR, immunodetection, histological staining, etc.); 3) some knowledge of bioinformatics is an asset; and 4) high level of interest and engagement.			
Skills that a prospective intern will learn:			
The intern will gain numerous skills that will prepare them for a job in industry, including: 1) development and execution of robust screens; 2) development of cross-validation skills for target			

assessment; 3) tools for assessment of business and therapeutic opportunities for identified candidates; 4) insights into pre-clinical programs aimed at modifying mesenchymal progenitor (MP) activity for the treatment of various diseases. MP dysfunction is associated with a wide spectrum of diseases, and there is intense interest in this field from a range of biotechnology and pharmaceutical companies.			
Company Name:	Morphocell Technologies	Company Areas of Focus:	Cell Production, Bioengineering/biomaterials, Organoid production/transplantation
Location: Montreal, QC			
Internship Description:			
This internship offers exposure to R&D activities of a regenerative medicine company working to bring its stem cell-derived products to the clinics. Several projects are available to interns, touching several aspects of product development: manufacturing of iPSC-derived liver tissues, scale-up, preclinical studies in rodents and large animals, biomaterial development, regulatory work, etc.			
Essential skills required to undertake this internship:			
At least 2 years of laboratory experience (even part-time), enthusiasm, established cell culture skills, absolute scientific rigor, capacity and will to be part of a team			
Skills that a prospective intern will learn:			
The intern will learn proper data collection, quality controls, reporting, SOP application and implementation, iPSC culture and differentiation, use of bioreactors, 3D organoids generation and characterization, standard cell and molecular biology techniques (qPCR, flow cytometry, fluorescence microscopy, ELISA), biomaterial engineering, regulatory requirements, etc.			
Company Name:	Octane Orthobiologics	Company Areas of Focus:	Cell Production, Bioengineering/biomaterials
Location: Kingston, ON			
Internship Description:			
Octane Orthobiologics is a Kingston-based Biotechnology company focusing on patient-specific cell therapy and tissue engineering processes for regenerative medicine. Our class-leading automation technology enables the complete automation of a cell culture process within an enclosed system. This automated bioreactor is currently used for orthopedic applications such as the production of an autologous chondrocyte implant. The student will be involved in designing a customized platform for a new cell therapy product and implementing the cellular process into the system.			
Essential skills required to undertake this internship:			
Biology and engineering background, interest in automation of cell therapy products			
Skills that a prospective intern will learn:			
During this placement at Octane, the student will enhance skills related to biology, chemistry, and engineering by designing a customized bioreactor platform for an orthopedic cell therapy application. The designed platform will be tested in the lab using primary cells. Overall, the student will learn the design of customized flowpaths and implementation of the manual cellular process onto the automated platform.			
Company Name:	PanTHERA CryoSolutions Inc.	Company Areas of Focus:	Cryopreservation
Location: Ottawa, ON or Edmonton, AB			
Internship Description:			

PanTHERA CryoSolutions is a Canadian corporation that designs and manufactures cryopreservation solutions for cells in the gene and cell therapy market. Our patented ice recrystallization inhibitor (IRI) technology exceeds competitors' products by providing superior cryopreservation and increasing post-thaw cell recovery and function for our customers. The technology enables the use of less costly storage and transportation systems limiting liquid nitrogen use for some cell therapy applications. BioLife Solutions, a leading supplier of class-defining cell and gene therapy bioproduction tools and services, and Casdin Capital are both investors in PanTHERA CryoSolutions Inc. Our company is located in Ottawa and Edmonton. Our team currently has 8 team members and it's growing rapidly. This project aims to determine the efficacy of our lead product when used in its recommended formulation. We will evaluate how the presence of our IRI enhances the recovery, viability, proliferation and stability when used in combination with different cryobuffers for the cryopreservation of different types of immune and stem cells.

Essential skills required to undertake this internship:

- Prior biology laboratory working experience is required, with mammalian cell culture preferred
- Self-motivated, team player, able to work independently, excellent oral & written communication skills

Skills that a prospective intern will learn:

Interns will have the opportunity to polish their mammalian cell culture skills growing by being solely responsible for the culturing of multiple cell types. They will also be able to perform cell viability and post-thaw cell recovery assays and they will participate in assays that evaluate the post-thaw function of each of these different cell types that are relevant to cell therapies. They will also be trained to properly analyze data.

Company Name:	Virano Therapeutics	Company Areas of Focus:	Gene Therapy, Immunotherapy, Drug screening
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Location: Toronto, ON

Internship Description:

Virano Therapeutics is seeking an intern to support proof-of-concept studies that will test the ability of Virano's Vector Potentiators (VEPOs™) to effectively reduce the dose of the gene therapy required for effective treatment of Spinal muscular atrophy (SMA). The results from this project will allow Virano to continue the development of a more effective, safer SMA gene therapy and demonstrate the value proposition of the VEPO technology for other therapeutic applications requiring high doses of virus, such as for Duchenne Muscular Dystrophy (DMD).

Essential skills required to undertake this internship:

The intern must have graduate post-secondary experience in molecular/cellular biology, virology, immunology, or a related discipline. Familiarity with in vivo models, high-throughput screening, or Design of Experiment design (DOE) methodology are considered strong assets. Finally, the candidate will need to show aptitudes for managing projects, and effectively recording/communicating results.

Skills that a prospective intern will learn:

A trainee at Virano will be directly exposed to strategies and tactics required to grow a biotechnology business in cell and gene therapy. In particular, the trainee will learn:

- Pre-clinical experimental design and data analysis for translational research
- Research and development budget management
- Communication of Scientific data for a broad range of stakeholders.
- Intellectual property generation and management