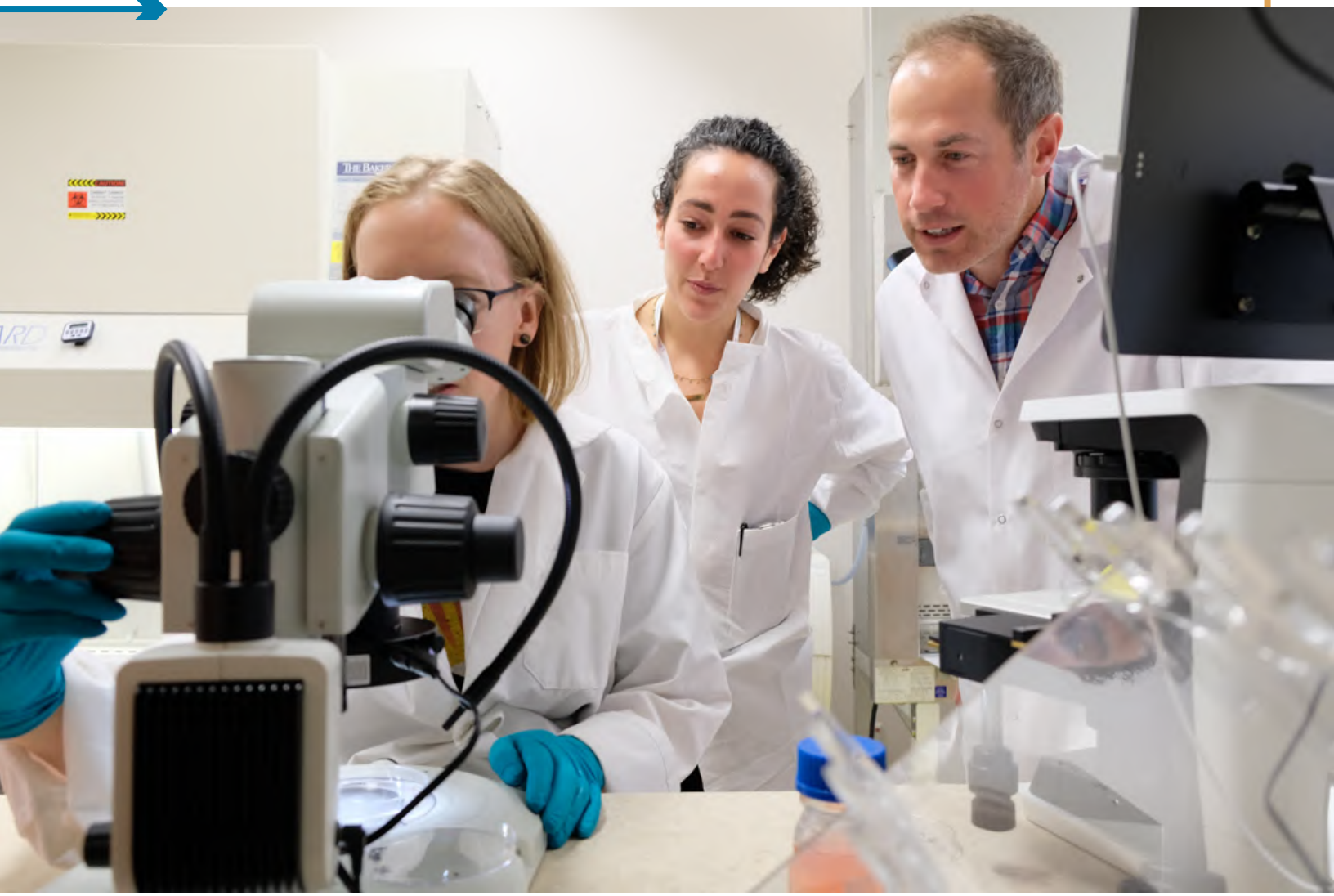
CANADA'S SCIENCE. **CANADA'S FUTURE.**

ANNUAL REPORT 2023/2024



Stem Cell Network | Réseau de Cellules Souches

Powering Regenerative Medicine
Propulsons la médecine régénératrice

ABOUT THE STEM CELL NETWORK

The Stem Cell Network (SCN) is a Canadian not-for-profit that supports stem cell and regenerative medicine research; training the next generation of highly qualified personnel; and knowledge mobilization and transfer of stem cell and regenerative medicine research. From the lab to the clinic, SCN's goal is to power life-saving therapies and technologies through regenerative medicine research for the benefit of all. Created in 2001, with support from the Government of Canada, the Network has grown from a few dozen labs to more than 270 world-class research groups, supporting over 250 research projects and 30 clinical trials. Since its inception, over 25 biotech companies have been catalyzed or enhanced and more than 7,000 highly qualified personnel have been trained. In 2021, the Government of Canada demonstrated its continuing trust and support in SCN with an investment of $45 million for the 2022–2025 period. In 2023, the Government of Canada announced additional funding for SCN through the Strategic Science Fund that will support SCN to the end of the decade.

OUR EDI STATEMENT

The best science is inclusive science. The Stem Cell Network is committed to cultivating and preserving a culture of inclusion, diversity, equity, and accessibility. We value the individual differences, lived experiences, expertise, and knowledge of those in our community. We welcome the unique contributions of partners, employees, and community members regardless of age, ancestry, culture, gender identity, physical ability, race, religion, or sexual orientation. Together, we are powering regenerative medicine.

LAND ACKNOWLEDGEMENT

The work of Canada's Stem Cell Network occurs from coast to coast and occurs on the traditional, ancestral, and unceded territory of many Indigenous peoples and nations, including the Anishinaabe Algonquin Nation where SCN is headquartered. SCN honours, recognizes, and respects these nations as the traditional stewards of the lands and waters where we work and meet.

SCN by the Numbers: 2001–2024

$148 MILLION
DIRECT INVESTMENT IN RESEARCH, TRAINING, AND OUTREACH

$157 MILLION
IN RESEARCH PARTNERSHIPS LEVERAGED

250+
TRANSLATIONAL RESEARCH PROJECTS SUPPORTED

279
RESEARCH GROUPS FUNDED

1,182
PATENT APPLICATIONS

223
PATENTS ISSUED

120
LICENCES GRANTED

7,000+
TRAINEES AND HIGHLY QUALIFIED PERSONNEL TRAINED

30
CLINICAL TRIALS FUNDED

27
REGENERATIVE MEDICINE BIOTECH COMPANIES CATALYZED

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SCN 2022–2025 ROUND 2 FUNDING RESULTS

A MESSAGE FROM SCN **LEADERSHIP**

Dear Friends,

It is with immense pride and gratitude that we share with our community the incredible progress and achievements of the Stem Cell Network (SCN) through our 2023–2024 Annual Report.

Over the past year, SCN has achieved significant milestones that underscore our commitment to advancing stem cell and regenerative medicine (RM) in Canada and beyond. Members of the Stem Cell Network have yielded remarkable successes from groundbreaking clinical trials in type 1 diabetes to a world-first stem cell treatment for premature infants. Additionally, major investments with SCN-linked companies were also achieved including: Aspect Biosystems (US$2.6 billion deal for bioprinted tissue therapeutics for diabetes and obesity), Satellos Bioscience (US$55 million for its lead drug candidate for Duchenne Muscular Dystrophy), and Morphocell Technologies (US$40 million deal for its cell therapy technology for Acute Liver Failure). Collectively, these advancements are a clear demonstration of Canadian scientific excellence and our ability to translate research from bench to bedside to the marketplace.

The Stem Cell Network has a mandate to support research, training and knowledge mobilization. This year's report highlights the many activities we undertook in these areas. In spring 2023, we were delighted to announce $8.92 million for 24 innovative research projects and clinical trials that are paving the way for future breakthroughs that will impact countless lives. Additionally, in September 2023, we announced $1 million in funding to further support research trainees across Canada who are actively engaged in our ongoing projects and clinical trials. Within the pages of this Annual Report (pgs. 17-25) you can read more about the remarkable research being conducted with SCN support. This past year represented SCN's busiest year for our training offerings. We provided a record number of training opportunities (34) including workshops, courses, exchanges and internships. Over the course of the year 1,394 highly qualified personnel took advantage of SCN's training programs.

As part of our knowledge mobilization and outreach work for the year we launched a range of new initiatives such as our partnership with the Japan Agency for Medical Research and Development. Together we hosted a virtual research showcase that brought together experts from Japan and Canada to share their research and discuss scientific activity in areas such as iPSCs for the treatment of disease and illness. We look forward to continuing such collaborations into the future.

Closer to home, SCN hosted its first Early Career Researcher Symposium to share research advancements happening within ECR labs and fostering new networks and collaborations among the national ECR community. This initiative stems from feedback we received from our early career researchers regarding how SCN could support them with building networks and professional development.

This past year we also launched a 12-week Summer Studentship program to support senior undergraduate students who wished to work in a stem cell lab and receive hands on training and mentorship from some of Canada's researcher leaders. The program was so successful that it is running for a second time in 2024. Additionally, through a new relationship with UBC's Faculty of Medicine's Centre of Excellence for Indigenous Health we engaged nearly 50 Indigenous youth in learning about the fascinating world of stem cells.

None of our work would be possible without the dedication and support of our community of expert volunteers, Board of Directors, committee members, and staff. To all of you, we say thank you. Your commitment and passion are fundamental to our success, and we extend our heartfelt thanks for your invaluable contributions.

Finally, we invite you to explore this Annual Report and share your reflections with us. As we look ahead, we are excited to soon launch a new strategic plan and funding competition, injecting an additional $30 million into our ecosystem. It's an exciting time for our field and we look forward to continuing to offer our leadership and vision for Canada's stem cell and regenerative medicine research community.

Sincerely,

Declan Hamill, MA, BCL/LLB, ICD.D
Chair, Board of Directors

Cate Murray
President and CEO

Michael Rudnicki, O.C., Ph.D., FRS, FRSC
Scientific Director

Bernard Thébaud, M.D., Ph.D., FCAHS, FRCPC
Associate Scientific Director

HIGHLIGHTS FROM THE YEAR

2023

APRIL

SCN industry partner, Aspect Biosystems, secures a **US$2.6 billion** deal with Novo Nordisk for diabetes and obesity.

Recognizing hundreds of volunteers across Canada, SCN celebrates National Volunteer Week.

MAY

SCN and the Ontario Bioscience Innovation Organization (OBIO) formalize a partnership focused on the commercialization of research discoveries in regenerative medicine.

SCN announces $8.92 million in regenerative medicine research and clinical trials.

Researchers gather in Montreal for the inaugural SCN Early Career Researcher Symposium.

JUNE

SCN and the Rare Diseases: Models and Mechanisms Network (RDMM) announce a collaboration and new funding to advance understanding of rare disorders and diseases.

SCN and Heart & Stroke partner to launch a National Fellowship Program for Women's Heart and Brain Health.

SCN and MS Canada partner to launch a National Fellowship Program in Multiple Sclerosis.

Cate Murray, SCN President and CEO, facilitates an SCN-led company delegation at BIO International Convention in Boston. SCN supports two companies in attending: Mesintel and Morphocell Technologies.

HIGHLIGHTS FROM THE YEAR **Continued**

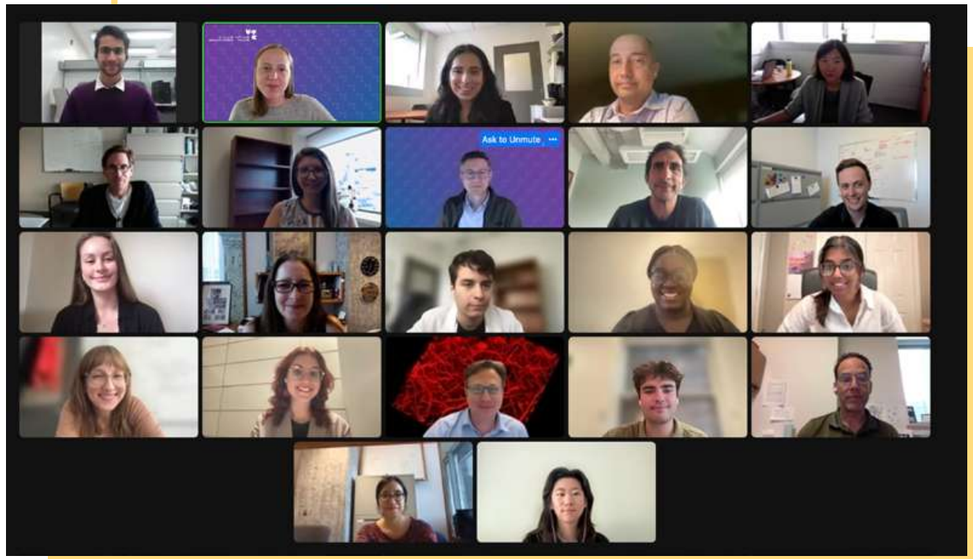
2023

JULY

SCN and the Japan Agency for Medical Research and Development (AMED) partner to host a virtual research showcase event exploring the innovative and impactful stem cell and regenerative medicine research activity in both countries.

AUGUST

A cohort of senior undergraduate summer students present their project progress at the virtual SCN summer studentship symposium.



SCN supports Indigenous youth to participate in the 2023 UBC Summer Science Program.

SCN announces $1 million in funding to further support graduate students and post-doctoral fellows.

Dr. Gordon Keller is announced as the 2023 Till & McCulloch award recipient for his research on heart development and stem cell-derived heart cell subtypes. (RIGHT)

SEPTEMBER

HIGHLIGHTS FROM THE YEAR Continued

2023

OCTOBER

SCN awards three post-doctoral fellowships alongside charity partners, JDRF Canada, MS Canada, and Heart & Stroke.

To inform the development of SCN's three-year strategic plan, SCN brings together principal investigators (PIs) for strategic discussions.

500+ attendees gather in Toronto for the Network's 2023 Till & McCulloch Meetings.

During Diabetes Awareness Month, Cate Murray, SCN President and CEO, participates in an exclusive Canadian panel event and film screening of The Human Trial.

NOVEMBER

New results from an SCN-funded clinical trial herald significant findings: a stem cell-based treatment can meaningfully control blood sugar levels in people with type 1 diabetes.

SCN and Research Canada co-host an exclusive panel and luncheon event to discuss the access and affordability of cell and gene therapies and showcase game-changing regenerative medicine research.

SCN welcomes new members to its Board of Directors and Research Management Committee (RMC).

The Government of Canada announces additional funding for SCN through the Strategic Science Fund (SSF) to support Stem Cell Network to the end of the decade.

DECEMBER

HIGHLIGHTS FROM THE YEAR Continued

JANUARY

Dr. Bernard Thébaud and his team from The Ottawa Hospital and CHEO, celebrate premature baby Emmy Cogan, the first premature baby ('preemie') in the world to receive a stem cell treatment through an SCN-funded clinical trial. (RIGHT)

SCN and the Medical Research Council announce the 2024 awardees of the UK-Canada Exchange Program in Regenerative Medicine.

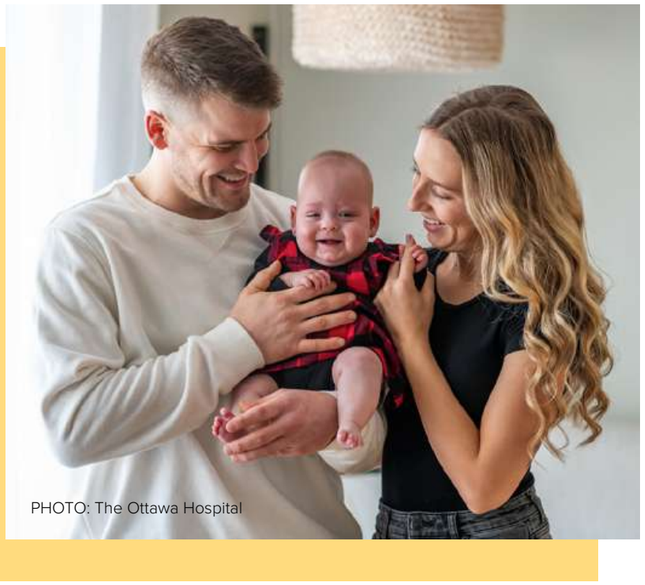


PHOTO: The Ottawa Hospital

SCN and OBIO co-host the Scientific Founders Program, a week-long program to arm aspiring entrepreneurs with the essential skills and knowledge needed to build and launch a successful regenerative medicine startup.

FEBRUARY

With SCN support, AmacaThera, Synakis, and Telescope Therapeutics participate at the OBIO Investment Summit.

MARCH

SCN celebrates International Women's Day

SCN President and CEO Cate Murray and Jon Draper, Vice-President of Research and Training, attend Europe's largest cell and gene therapy event, Terrapinn's "Advanced Therapies" conference, in London, England. (RIGHT)

POWERING LIFE-SAVING THERAPIES THROUGH **RESEARCH**

For more than two decades, the Stem Cell Network has been a driving force behind cutting-edge stem cell and regenerative medicine (RM) research, empowering leading researchers and trainees from coast to coast, and positioning Canada as a global leader in the field.

Comprised of a collaborative and interconnected community of top-tier stem cell and regenerative medicine researchers and clinicians, SCN is at the forefront of scientific breakthroughs and works avidly to advance clinical trials — all aimed at revolutionizing health solutions for the benefit of all Canadians.

As the sole national, not-for-profit network dedicated to stem cell and regenerative medicine research in Canada, SCN is committed to powering the innovative research of today to advance the novel cell therapies of tomorrow.

RESEARCH WITH IMPACT

SCN's research program has been carefully designed to meet the needs of Canada's stem cell and RM community at all stages of the research continuum. Not only does SCN's research program foster Canadian innovation and translational strengths, but it fortifies Canada's position in a globally competitive sector. Since 2001, SCN has made strategic investments in stem cell and regenerative medicine research, positioning Canada as a global leader in the field. With support from the Government of Canada, SCN has grown from a few dozen labs to more than 270 world-class research groups, supporting more than 250 research projects and 30 clinical trials.

SCN 2022–2025 Funding Results

$28.4M
56 PROJECTS

$31.8M
IN PARTNER SUPPORT

550+
RESEARCHERS, CLINICIANS, AND TRAINEES ENGAGED

22
CANADIAN RESEARCH INSTITUTIONS

26
DISEASE AREAS

DID YOU KNOW?

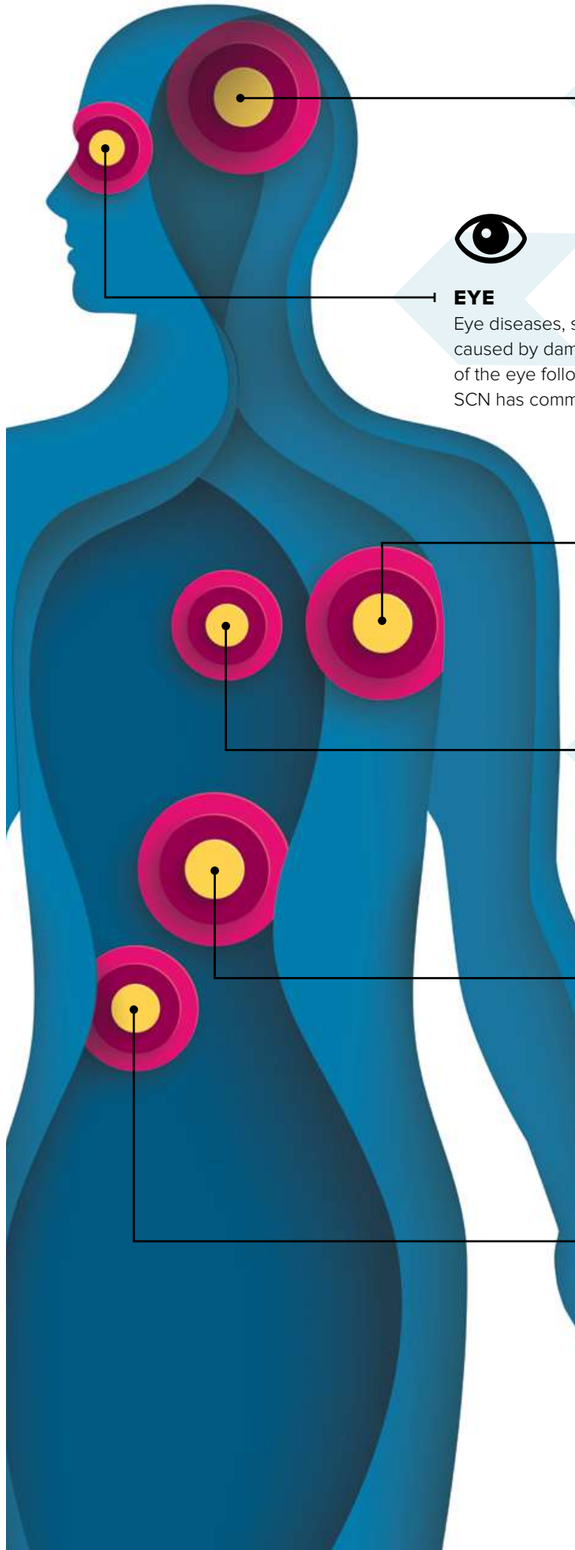
Stem cells are often described as the body's building blocks. With more than 200 cell types in the body, only stem cells can develop into tissues and organs. Regenerative medicine is a translational science that uses stem cells to repair or regenerate cells, tissues, and organs, with the goal of establishing normal function.

The 2023–2024 fiscal year was an incredibly busy one for the Stem Cell Network's research program. In May 2023, SCN announced the results of the second and final funding competition for the 2022–2025 period (Cycle 4, Round 2*). In total, 24 stem cell and regenerative medicine research projects and clinical trials received funding, valued at $8.92 million, with 23 partner organizations committing $9.44 million of in-kind or cash support. When combined with the 32 projects funded in Round 1, SCN has 56 active research projects and clinical trials underway. This represents a combined total of $28.4 million of SCN funds and $31.8 million of partner support invested in the Canadian stem cell and regenerative medicine sector.

On May 16, 2023, SCN was honoured to be joined by Adam van Koeverden, Member of Parliament for Milton, and Parliamentary Secretary to the Minister of Health, to formally announce the research funding results alongside Parliamentarians, researchers, SCN Board members, and partners.

Round 1 and 2 research projects and clinical trials span more than **26 disease areas**, including diabetes, liver and heart disease, and neurological disorders and diseases.

**See Appendix for full list of 2022–2025 Round 2 Funding Results.*



BRAIN
Neurological diseases and disorders affect the brain, spinal cord, and nerves that form an intricate and complex network. From 2019–2025, SCN has committed more than $2.5 million in funding for innovative neural research and clinical trials.

EYE
Eye diseases, such as limbal stem cell deficiency, are caused by damaged or depleted stem cells in the cornea of the eye following trauma or disease. From 2019-2025, SCN has committed more than $1.6 million in this area.

HEART
Heart disease is the leading cause of death and disability in Canada. From 2019–2025, SCN has committed more than $5.9 million in this area.

LUNG
One-in-five Canadians have lung disease, with lung cancer being the leading cause of cancer deaths. From 2019-2025, SCN has committed 2.5 million in this area.

LIVER
With more than 100 different types of liver disease caused by various factors, chronic liver disease affects one in four Canadians. From 2019–2025, SCN has committed more than $2.2 million to fund research for liver disease.

PANCREAS
Diabetes is a disease in which the body either cannot produce insulin (type 1), a hormone produced by the pancreas, or cannot properly use the insulin it produces (type 2). From 2019–2025, SCN has committed more than $6.6 million in funding for diabetes research and clinical trials.

To ensure all funded projects remain on track to meet milestones and deliverables, SCN adheres to a continual and rigorous peer review process. In April 2024, reporting occurred for SCN-funded projects from Cycle 4 — including final reports for two-year awards made in Round 1 (April 2022). The three-year awards from Round 1 and all awards from Round 2 submitted progress report updates. Several reports from Rounds 1 and 2 indicated that research projects and clinical trials are moving forward as expected and planned.

At the end of the fiscal year, SCN began laying the groundwork for its next research funding competition, Cycle 5, set to launch in fall 2024.

SCN's Peer Review Process

To ensure a research project's milestones and deliverables are being met and that SCN funds are appropriately invested, SCN uses a Continual Review process for all projects approved by its Board of Directors. Continual Review is conducted by the Research Management Committee (RMC), which offers insight and direction in reviewing annual project progress reports. The RMC may also meet directly with investigators to better understand the nuances of their research so investigators receive the best possible feedback and support.

Funded Research Database

In fiscal 2023–2024, SCN successfully launched a newly designed, web-basd, searchable database. It includes information on all SCN-funded research projects and clinical trials from 2016 onward. Searchable by keyword, disease area, technology, and institution, this database is an important tool for members of the research and training community in identifying potential research partners for new and/or expanding collaborations.

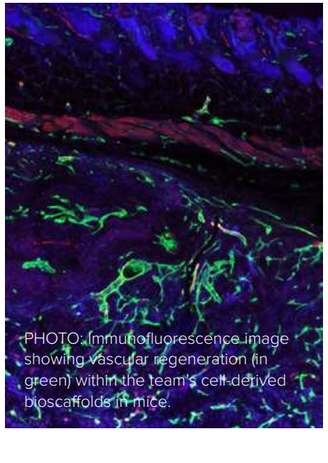


PHOTO: Immunofluorescence image showing vascular regeneration (in green) within the team's cell-derived bioscaffolds in mice.

RESEARCH SPOTLIGHTS

REVOLUTIONIZING CHRONIC WOUND CARE WITH INNOVATIVE CELL THERAPIES

Dr. Lauren Flynn, Western University

Cycle 4, Round 1: Impact Awardee

Chronic skin wounds are prevalent among diabetics, those with vascular disease, and the elderly, imposing a significant burden on the Canadian healthcare system. Current treatments often fail, leading to extended healing times and potential amputations. Dr. Flynn's research proposes innovative cell therapies derived from human fat discarded as surgical waste to stimulate blood vessel formation and soft tissue regeneration. Through pre-clinical testing on animal models, her team aims to validate the therapy's efficacy and pave the way for human trials. Demonstrating proof-of-concept could attract industry partners for commercialization, positioning Canada as a leader in advanced wound care.

"Chronic or non-healing wounds exact a heavy toll on patients, negatively affecting their overall health and quality of life, and place a substantial burden on the Canadian healthcare system. Our innovative cell therapies offer hope, leveraging discarded surgical fat to spark natural healing processes. This research is vital for revolutionizing chronic wound care and advancing healthcare in Canada."

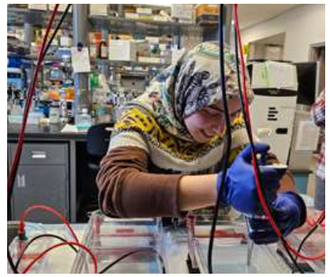
BOOSTING IMMUNITY AFTER BLOOD CANCER TREATMENT USING PROT CELLS

Juan Carlos Züñiga-Pflücker, Sunnybrook Research Institute

Cycle 4, Round 2: Accelerating Clinical Translation Awardee

Current treatments for some blood cancers involve chemotherapy, radiation, and hematopoietic stem cell transplant (HSCT), sometimes called a bone marrow transplant. However, T cells, key components of the immune system, remain absent or low post-HSCT, increasing cancer relapse and infection risks. Lengthy antibiotic use and donor T-cell infusions are common but risky due to graft-versus-host disease which may lead to organ failure and death. Dr. Züñiga-Pflücker's novel approach generates progenitor T (proT) cells from donor stem cells, aiding T-cell replenishment post-HSCT without causing graft-versus-host disease. Animal studies are showing promising results, suggesting proT cells could enhance HSCT patients' quality of life by reducing infection risks and relapse.

"Our breakthrough method offers hope for safer and more effective treatment after blood cancer therapy. By generating proT cells from donor stem cells, we aim to restore the immune system without the risks of graft-versus-host disease. This could transform outcomes and quality of life for hematopoietic stem cell transplant patients."



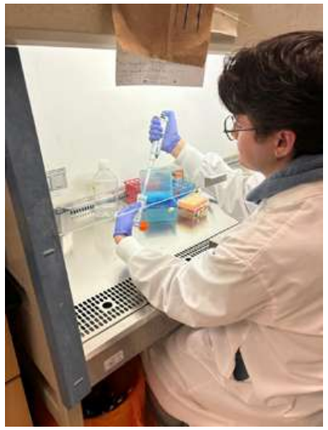
USING MACHINE LEARNING TO UNDERSTAND MUSCLE STEM CELL REGULATION

Dr. Arvind Mer, University of Ottawa

Cycle 4, Round 2: Impact Awardee

Muscle repair relies on muscle stem cells, also known as satellite cells, which activate upon injury, proliferating and differentiating to replace damaged tissue. Yet, how these cells decide their fate —quiescence, activation, differentiation, or self-renewal — remains unclear. Dr. Arvind Mer and his team are addressing this fundamental question by blending bioinformatics, machine learning, and experimental genomics. By decoding the role of alternative splicing in satellite cell activity, they aim to understand cell fate processes. Additionally, machine learning will help the team identify drugs that sustain satellite cell regeneration potential. Ultimately, this research not only deepens understanding of muscle repair mechanisms but also holds promise for advancing regenerative medicine, offering new avenues for effective treatments.

Alternative splicing is a key post-transcriptional regulatory mechanism that can produce multiple isoforms from a single gene. Despite being essential to controlling cellular processes, the pattern of alternative splicing and its role in modulating muscle stem cell function are not well understood. My team is using machine learning and genomics to decipher the alternative splicing network that regulates muscle stem cell function, advancing our understanding of this fascinating process and providing possible drug candidates that will pave the way for novel regenerative medicine-based clinical applications."



PROMOTING EARLY ECONOMIC EVALUATIONS IN REGENERATIVE MEDICINE

Dr. Jason Robert Guertin, Université Laval

Cycle 4, Round 1: Impact Awardee: ELSI Stream

To be used widely across Canada, effective health technologies must be cost-effective. Regrettably, expertise in the economic aspects of regenerative medicine (RM) is limited. Dr. Guertin's research project examines the cost of a specific RM technology, self-assembled skin substitute (SASS), currently being used to treat severe burns. Using SASS as a case study, his team is also creating tools tailored to fundamental and clinical researchers to aid future economic studies, facilitating technology adoption and research planning — benefitting both patients and researchers.

Our research aims to bridge the gap between innovation and accessibility in healthcare. By understanding the costs of advanced treatments like SASS, we're paving the way for more affordable and widely available options for patients. Our tools will empower researchers with the know-how needed in health economics to ensure sustainable progress in healthcare."

DEFINING HOW CARDIAC MUSCLE CELLS BECOME FULLY MATURE

Dr. Sheila Teves, University of British Columbia

Cycle 4, Round 1: Early Career Researcher Jump Start Awardee

Genetics often play a role in a patient's risk of contracting heart disease. The challenge is that each patient carries a unique set of genes so the genetic risk factors and causes underlying heart disease can be unique for every patient. One way to study a patient's unique genes is to take a small biopsy (e.g., skin) from a patient and manipulate those skin cells in the lab to become a special cell type (induced pluripotent stem cells, or iPSCs), which can then become any type of cell in the body, such as heart cells. Dr. Teves and her team are studying the pathway to create heart cells from iPSCs and hope to use their improved methods to create patient-specific treatments for certain types of heart disease. This innovative and exciting research is establishing a path forward for a personalized therapy for those at risk for heart disease.

Our research is generating a fundamental understanding of heart stem cells, knowledge which will help us develop new treatments for heart diseases — treatments such as hypertrophic cardiomyopathy. Through this SCN-funded project, our aim is to build meaningful connections with Canada's strong community of stem cell and regenerative medicine researchers. In fostering pan-Canadian collaborations, together, we can develop better, more targeted stem cell-based therapies for heart disease."

CLINICAL TRIALS PAVING THE WAY FOR A BRIGHTER TOMORROW

PHOTO:The Ottawa Hospital

Clinical trials are the driving force behind medical progress, offering hope to patients, saving lives through innovative treatments, and propelling the boundaries of scientific knowledge.

SCN is powering clinical trials, testing new cell-based therapies and technologies to address illnesses such as blood cancers, sepsis, and type 1 diabetes, as well as lung development in premature babies and wound repair for burn patients. Clinical trials, such as those highlighted here, are just a few of the important and life-altering trials moving forward in the field of regenerative medicine.

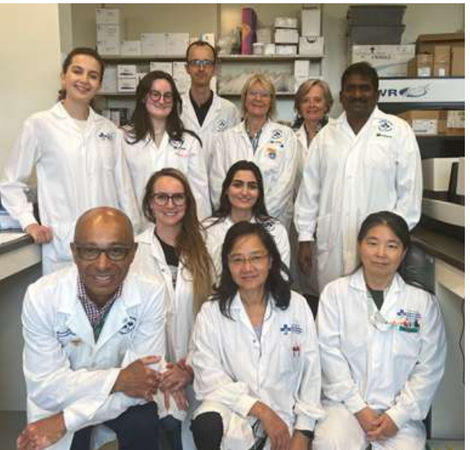
TINY CELLS FOR TINY LUNGS

Preterm babies require supplemental oxygen and mechanical intervention to breathe, but this can damage their fragile lungs, causing bronchopulmonary dysplasia (BPD), a chronic lung disease. With smaller and weaker lungs, and consequently, a lack of oxygen during brain development, babies with BPD can develop learning disabilities or problems walking, hearing, and seeing. Approximately 1,000 babies in Canada develop BPD each year, with complications of extreme preterm birth being the leading cause of death in children under five years old.

In a world-first clinical trial, nine babies at high risk of developing BPD have been successfully enrolled and treated. This Phase I Clinical Trial is funded by SCN and led by Dr. Bernard Thébaud and his team at The Ottawa Hospital and CHEO. The first patient treated in the trial, Emmy Cogan, was born at just 23 weeks gestation, weighing a mere 515 grams.

Reflecting on the decision to enroll Emmy in the trial, her dad Mike Cogan shared, “Being a preemie, Emmy’s going to have some health issues. And anything that could help, we wanted to give her that extra shot.”

Emmy and the other eight babies were treated with an IV infusion of umbilical cord tissue cells grown from the donated umbilical cords of healthy newborns, manufactured with collaborators in Dresden, Germany. The goal of the trial is to determine whether the therapy is safe and feasible for premature babies, and to find the best dose for future trials.



“All of the babies in the trial are doing well so far. We’re seeing promising signs that the cells are not only safe, but may also be improving their outcomes. But we won’t know that for sure until we can do a larger trial. This safety trial is a critical step towards a potential breakthrough therapy that could help premature babies in Canada and around the world.”

—Dr. Bernard Thébaud

ONE STEP CLOSER TO A FUNCTIONAL CURE FOR DIABETES

Type 1 diabetes is a chronic autoimmune disease affecting more than 300,000 Canadians and costing the healthcare system approximately $29 billion annually. Those living with type 1 diabetes cannot produce insulin, an important hormone that helps the body control glucose levels in the blood. Although life-saving, insulin injection is not a cure for diabetes.

In November 2023, Drs. David Thompson and Timothy Kieffer, from the University of British Columbia and Vancouver Coastal Health, published the results of a groundbreaking, SCN-funded, multisite clinical trial focused on using stem cell-based devices to find a functional cure for those living with type 1 diabetes.

The devices, approximately the size of a BAND-AID® and no thicker than a credit card, aim to replace the insulin-producing beta cells lacking in people with type 1 diabetes.

In 2023, the clinical trial enrolled and monitored 10 participants; none had detectable insulin production at the start of the study. All participants underwent surgery, receiving up to 10 device implants each. Six months later, three participants showed significant markers of insulin production — maintaining those levels throughout the remainder of the year-long study.

Research continues as the teams at Vancouver Coastal Health and the University of British Columbia work towards two goals: increased cell survival and eliminating the need for immunosuppression.

“For the first time, we have shown that a stem-cell based device can reduce the amount of insulin required for some trial participants with type 1 diabetes. With further refinement of this approach, it’s only a matter of time until we have a therapy that can eliminate the need for daily insulin injections entirely.”

—Dr. David Thompson

PHOTO: Dr. David Thompson consults with a patient in his office. (Credit: Vancouver Coastal Health)

REMEMBERING DR. CONNIE EAVES

It was with great sadness that, in March 2024, we fondly remembered and celebrated Dr. Connie Eaves — a world-renowned pioneer in stem cell and cancer research, and long-time member and champion of the Stem Cell Network.

As founding scientist of SCN, Dr. Eaves contributed greatly to the Network through her research, in addition to training and mentoring the next generation of stem cell and regenerative medicine researchers.

Dr. Eaves was a distinguished scientist at BC Cancer's Terry Fox Laboratory and professor in the Department of Medical Genetics and the School of Biomedical Engineering at the University of British Columbia. Spanning five decades, her seminal work advanced treatments for leukemia and breast cancers while her groundbreaking research methodologies have become gold standards with significant worldwide applications. Throughout her career, training more than 100 scientists globally, Dr. Eaves demonstrated exceptional national and international leadership.

In her career, Dr. Eaves was the recipient of accolades of the highest honour: she was appointed to the Order of Canada, elected to the Royal Society (London, UK), inducted into the Canadian Medical Hall of Fame, and received the Till & McCulloch Lifetime Achievement Award, and the Canada Gairdner Wightman Award recognizing scientists who make transformative contributions to human health research.

Dr. Eaves leaves a lasting legacy as a true trailblazer, and Canada was incredibly fortunate to have benefitted from her contributions and leadership.

She will be deeply missed and forever celebrated.

TRAINING
NEXT-GENERATION LEADERS

The Stem Cell Network recognizes that a highly skilled workforce is essential for advancing stem cell and regenerative medicine research and boosting Canada's knowledge economy. Accordingly, training has been an integral part of the Stem Cell Network's mandate since its inception.

With a focus on providing opportunities for researchers at all levels, from trainees to senior investigators, SCN aims to equip Canada's RM community with the necessary tools and knowledge to excel. This includes training in foundational techniques, cutting-edge methods, clinical, and commercial learnings to ensure readiness to contribute effectively to this sector for years to come.

During the fiscal year, SCN collaborated with various partners to deliver a robust training program, such as, workshops, courses, exchanges, internships, fellowships, webinars, and training through the Till & McCulloch Meetings. This effort provided 34 training opportunities to 1,394 trainees. An additional 147 trainees received hands-on lab experience through SCN-funded stem cell and regenerative medicine research projects.

TALENT DEVELOPMENT PROGRAM

SCN's comprehensive stem cell and RM training program enables the growth of national and international networks to support talent development and career advancement. Being part of SCN, trainees gain access to a vast network of researchers and numerous peers — meaningful opportunities for vital collaborations and career growth.

"The Stem Cell Network's training program is invaluable, offering a wide range of training opportunities, including workshops, internships, fellowships, attendance at conferences, and participation on committees. SCN is dedicated to helping trainees progress in their careers, build valuable connections, and actively contribute to the stem cell and regenerative medicine sector."

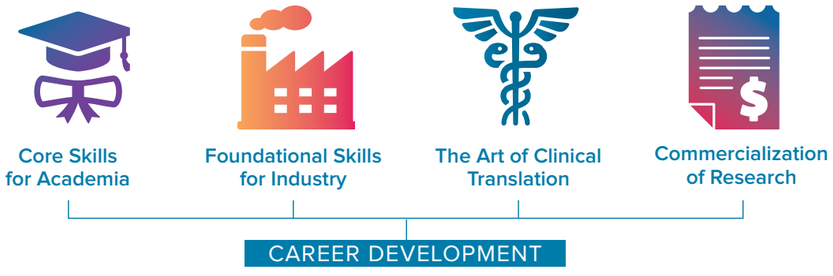
—Tyler Wenzel, Post-Doctoral Fellow, University of Saskatchewan, Trainee Communications Committee Chair

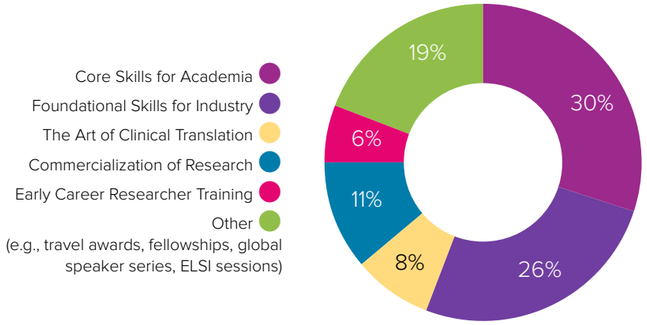
DID YOU KNOW?

Since 2001, with the support of key partners, SCN has trained more than 7,000 high qualified personnel (HQP).

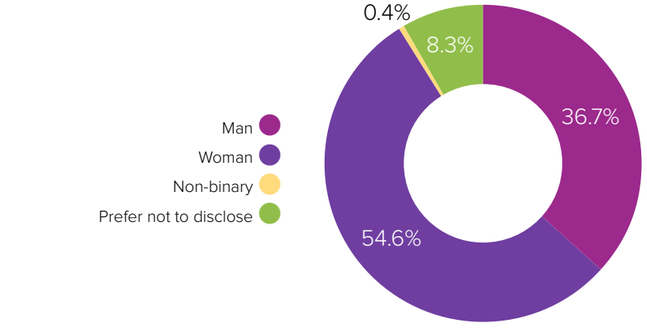
SCN'S TALENT DEVELOPMENT TRAINING PROGRAM SPANS FOUR KEY PILLARS OF ACTIVITY, DESIGNED TO:

- **Promote** rigour and reproducibility, to maximize the translational impact of outputs arising from SCN research funding investments in regenerative medicine.
- **Prepare** highly qualified personnel (HQP) for careers in academia and industry.
- **Accelerate** Canadian regenerative medicine research by building competence in foundational skills and cutting-edge techniques.
- **Facilitate** the clinical and commercial translation of RM discoveries.
- **Support** early career researchers in developing successful new research programs.





Training Pillars Breakdown 2023–2024



SCN Trainees by Gender 2023–2024
(n=1,394)

THE TRAINING YEAR IN REVIEW

MAY

RNA-SEQ ANALYSIS WORKSHOP

Date: May 11–29, 2023
Location: Online
Partner: Ottawa Bioinformatics Core Facility (OHRI)
Attendees: 32
RNA-seq technologies are an important tool for biomedical research, particularly for determining the molecular mechanisms that drive stem-cell fate. This intensive course provided trainees with theoretical background and practical hands-on skills for analyzing both bulk and single-cell RNA-seq data.

EARLY CAREER RESEARCHER SYMPOSIUM

Date: May 25, 2023
Location: Montréal
Attendees: 41
The Early Career Researcher Symposium connected researchers from institutions across Canada working in a wide range of RM-related disciplines, offering an opportunity to share research advances, build collaborations, and receive training to assist them in strengthening research programs and delivering high-quality research outputs.

PRECLINICAL EXPERIMENTAL DESIGN AND REPORTING

Date: May 26, 2023
Location: Montréal
Attendees: 30
This workshop provided an overview of current reporting guidelines and important experimental design elements to reduce bias with the goal of setting the stage for successful experimentation and publication.

JUNE

HEALTH SCIENCE INDUSTRY TRAINING

Date: June 7, 2023
Location: Online
Partner: OBIO®
Attendees: 46
This 27-hour virtual course empowered participants with the skills and knowledge to commercialize a therapeutic product or work in the health science industry.

SUMMER BY DESIGN

Date: June 19, 2023
Location: Toronto
Partner: Medicine by Design
Attendees: 31
SCN supported a limited number of travel awards to attend Summer by Design, an intensive program for post-graduate students and post-doctoral fellows from Canadian and international universities in translating and commercializing RM. Summer by Design was hosted by the University of Toronto's Medicine by Design initiative, in partnership with CCRM, the Rotman School of Management, and the Stem Cell Network.

MACHINE LEARNING AND REGENERATIVE MEDICINE

Date: June 28 and 30, 2023
Location: Online
Attendees: 32
This two-day workshop boasted a panel of experts that discussed the fundamentals of machine learning, provided examples of its application in research, and described some of the field's latest advancements. Participants also got hands-on experience with machine learning frameworks and tools.

JULY

APOC WORKSHOP ON STEM CELLS AND NEURAL ORGANOIDS

Date: July 10–13, 2023
Location: Toronto
Partner: University of Toronto
Attendees: 3
This workshop provided attendees with an in-depth understanding of theory, applications, and techniques for generating neural organoid models from high-quality stem cell cultures to address fundamental questions underlying their research aims.

GLOBAL REGENERATIVE MEDICINE TRAINEE SPEAKER SERIES

Date: July 26, 2023; September 20, 2023; November 22, 2023; and January 31, 2024
Location: Online
Partners: Australasian Society for Stem Cell Research, German Stem Cell Network, Japanese Society for Regenerative Medicine, Belgian Society for Stem Cell Research, and Korean Society for Stem Cell Research
Attendees: 98
SCN partnered with five stem cell and RM societies and networks from around the globe to profile the research achievements of outstanding trainees, including graduate students, post-doctoral fellows, and research associates in each country.

AUGUST

PEPTIDE SYNTHESIS AND APPLICATIONS IN REGENERATIVE MEDICINE WORKSHOP

Date: August 14–17, 2023
Location: Ottawa
Partner: INTBIOTECH
Attendees: 3
The INTBIOTECH workshop on Peptide Synthesis and Applications in Regenerative Medicine boasted a comprehensive program that delved into various facets of peptide research and applications. Facilitated by esteemed experts Drs. Marcelo Muñoz and Emilio Alarcón, the workshop offered valuable insights into peptide synthesis, therapeutic applications, and their pivotal role in advancing regenerative medicine.

SEPTEMBER

SCN-ATAC-SEQ WORKSHOP

Date: September 8, 2023
Location: Ottawa
Partner: Ottawa Hospital Research Institute
Attendees: 16
Presented by Dr. Theodore Perkins, Dr. David Cook, and the Ottawa Bioinformatics Core Facility, this SCN- ATAC-seq workshop was a practical introduction to bulk and single-cell ATAC-seq data analysis.

CAREERS BEYOND ACADEMIA SEMINAR SERIES

Date: September 13, 2023; October 11, 2023; November 15, 2023; January 17, 2024; February 7, 2024; and March 13, 2024
Location: Online
Partner: Medicine by Design
Attendees: 233
This seminar series aims to help trainees better understand their career options beyond academia, the skills required for certain positions, and some of the daily functions of those positions. Each session features two speaker presentations, a joint Q&A, and panel discussion.

TILL & MCCULLOCH MEETINGS (OCTOBER 22–25)

TRAINEE PRE-CONFERENCE WORKSHOP — TIPS AND TRICKS: IMPROVE THE QUALITY OF YOUR MANUSCRIPTS AND GET PUBLISHED!

Date: October 22, 2023
Location: Toronto (TMM2023)
Attendees: 53
In this workshop, trainees were provided with tips and tricks to save time when publishing and to help them create more impactful work.

TRAINEE PRE-CONFERENCE WORKSHOP — GETTING THE "LIKES AND SUBSCRIBES" FROM YOUR HIRING COMMITTEE: A MASTERCLASS FOR DEVELOPING YOUR NETWORKING SKILLS AND SUCCESSFULLY NAVIGATING THE JOB APPLICATION PROCESSES

Date: October 22, 2023
Location: Toronto (TMM2023)
Attendees: 48
This workshop provided a toolkit for getting noticed among a pool of skilled applicants and securing work in areas including academia and industry.

PRE-CONFERENCE WORKSHOP — ANATOMY OF A GRANT: HOW TO LAND YOUR FIRST CIHR GRANT FOR EARLY CAREER RESEARCHERS

Date: October 22, 2023
Location: Toronto (TMM2023)
Attendees: 44
This workshop, planned by SCN's Early Career Researcher Committee, provided attendees with an opportunity to refine their grant-writing skills to achieve funding success and propel their research programs to the next level.

NOVEMBER

UBC FLOW COURSE

Date: November 13–17, 2023
Location: Vancouver
Partner: University of British Columbia
Attendees: 17
Focused on flow cytometry samples and full understanding of troubleshooting strategies, this course maximized hands-on experience with participants working in small groups and using various instruments.

AN INTRODUCTION TO BIOLOGIC GMP MANUFACTURING: PREPARING FOR EARLY-PHASE CLINICAL TRIALS

Date: November 20, 27, and December 4, 2023
Location: Online
Partners: BioCanRx, and the National Research Council of Canada
Attendees: 247
Held over three sessions, this virtual event was designed to give biomedical research teams a comprehensive understanding of key topics in clinical translation, particularly, progressing a therapeutic-to-GMP manufacturing for an early-phase clinical trial.

DECEMBER

PLURIPOTENT STEM CELL MAINTENANCE & CELL QUALITY

Date: December 5–7, 2023
Location: Online
Partner: STEMCELL Technologies
Attendees: 15
This three-day, part-time course consisted of interactive lectures and laboratory demonstrations designed to teach essential techniques for culturing human pluripotent stem cells (hPSCs) in a feeder-independent system and how to assess hPSC lines for building a well-characterized working cell bank.

JANUARY

SCIENTIFIC FOUNDERS PROGRAM

Date: January 22–26, 2024
Location: Toronto
Partner: OBIO®
Attendees: 25
This week-long, in-person entrepreneurship training program empowered participants with the skills and knowledge to launch and build a successful regenerative medicine startup.

FEBRUARY

CANADIAN RARE DISEASE ECOSYSTEM SYMPOSIUM: GENETIC THERAPIES FOR RARE DISEASES

Date: February 14, 2024
Location: Online
Partner: National Research Council of Canada, Cell and Gene Therapy Challenge Program
Attendees: 174
A three-hour virtual symposium that explored a Canadian perspective for the clinical translation of rare disease gene therapies.

INDUSTRY SKILLS FOR THE CELL AND GENE THERAPY SECTOR: PRODUCT DEVELOPMENT AND LIFECYCLE LEARNING SERIES

Date: February 14, 21, and 28, 2024
Location: Online
Partner: Canadian Advanced Therapies Training Institute (CATTI)
Attendees: 15
An online interactive learning series that provided attendees with a foundation in topics related to biomanufacturing and product development workflows, enabling trainees to better understand and plan for future industry careers in the cell and gene therapy sector.

BIOENGINEERING FOR STEM CELL RESEARCH

Date: February 19–21, 2024
Location: Vancouver
Attendees: 15
This three-day, in-person workshop focused on bioengineering techniques. Attendees improved their knowledge in micro-/nanotechnology, materials science, tissue engineering, and regenerative medicine. They also participated in hands-on sessions focussed on 3D-bioprinting and microfluidics/organs-on-a-chip.

INTERNSHIPS, FELLOWSHIPS, AND EXCHANGES

Understanding the significance of developing talent, the Stem Cell Network leverages the expertise of its partners to equip future leaders with the necessary hands-on experience to thrive in Canada's growing regenerative medicine sector. This is achieved through a range of opportunities, such as internships, fellowships, and exchanges. In January 2022, SCN and Mitacs partnered to offer the **SCN-Mitacs Industry-Based Internship Partnership** which pairs the brightest graduate students and postdoctoral fellows with RM-focused biotech companies that are moving innovative therapies and technologies into the marketplace. SCN successfully placed four interns in the program's first year.

Now in its second year, six applicants were successful and began their internships between July 2023–January 2024 with RM-focused biotech companies. They include:

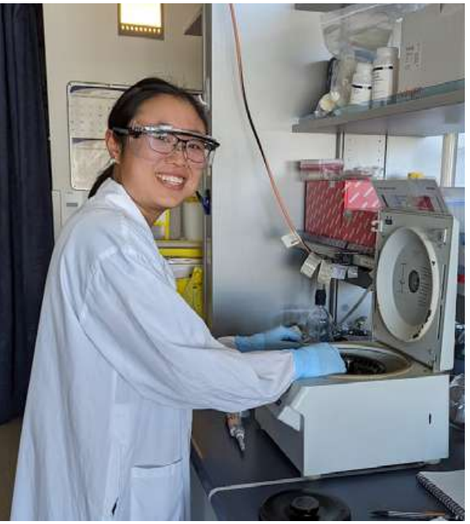
- **Jack Hickmott**, Postdoctoral Fellow, University of Toronto, company match: Virano Therapeutics
- **Kathryn Jalink**, Master's Student, Queen's University, company match: Morphocell Technologies
- **Behnam Panahi**, PhD Student, University of British Columbia, company match: Axolotl Biosciences |
- **Morgan Robinson**, PhD Graduate, University of Waterloo, company match: Mediphage Bioceuticals
- **Nazanin Vaziri**, PhD Student, University of Calgary, company match: Mesintel Therapeutics
- **Yuxi Zhang**, PhD Student, Queen's University, company match: Octane EXO Inc.

Hossein Golzar

SUCCESS STORY

Matched with Allarta Life Science in the first year of the SCN-Mitacs Industry-Based Internship Partnership, Dr. Golzar has since become a Senior Scientist with the company.

"As a Senior Scientist—Biomaterials and Biomanufacturing at Allarta, I design and develop fabrication methodologies for biomaterials supporting cell viability and function in vivo. Through the SCN-Mitacs program, I had the chance to immerse myself in a dynamic network of industry professionals, researchers, and collaborators. This experience proved invaluable, not only for establishing new connections in the biotechnology sector but also for enriching my own career trajectory and educational journey.
Moreover, the program facilitated hands-on experiences and collaborative projects that bridged the gap between academic research and industrial application. This fusion of theoretical knowledge with practical application not only enhanced my skill set but also fostered a deeper appreciation for the complexities and nuances of translating scientific discoveries into tangible products and processes."



In fiscal 2023–2024, alongside charity partners JDRF Canada, MS Canada, and Heart & Stroke, SCN awarded three **Fellowships** in stem cell and RM research, in type 1 diabetes, multiple sclerosis, and heart disease.

The **J. Andrew McKee Fellowship in Type 1 Diabetes** aims to accelerate novel type 1 diabetes cure research towards clinical translation. Each year through 2026, SCN and JDRF Canada are awarding one-year long fellowship to work at the JDRF Centre of Excellence at the University of British Columbia. The inaugural Fellow, Dr. Karoliina Tuomela, was named in 2022. The second awardee from this fellowship program, **Dr. Sing-Young Chen**, was named in 2023. Dr. Chen's research is focused on investigating sex differences in insulin-producing beta cell responses to stresses associated with type 1 diabetes. (T1D). T1D is more common in males than females, and female beta cells are less susceptible to stress-related cell death and can survive to continue producing insulin. Understanding and leveraging these differences will support development of new T1D therapies that will thrive in a T1D environment.

"The Fellowship truly makes the research possible. Science is a team sport that involves a lot of networking and collaboration, and I've been pleasantly surprised at all the resources and expertise we can draw upon at both the JDRF Centre of Excellence and through SCN. It really helps us not to be limited and, therefore, to be able to go where the science takes us."

—Dr. Sing-Young Chen

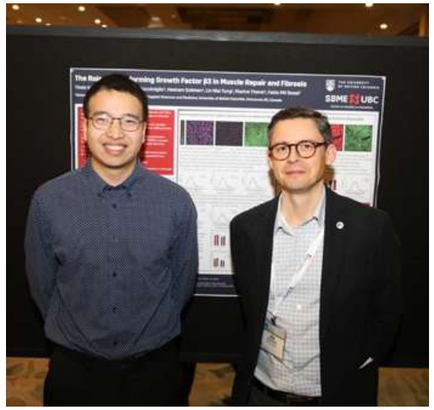
The **SCN-Heart & Stroke Postdoctoral Fellowship for Women's Heart and/or Brain** aims to pursue research, including stem cell and RM approaches, to investigate, treat, or cure heart and/or brain diseases predominantly affecting women. This award is two years in duration. **Dr. Yimu Zhao** was named as the awardee for this fellowship in 2023. Dr. Zhao's research focuses on creating a "heart on a chip" model to evaluate the potential of mitochondrial transplantation as a treatment for heart attacks. This promising work has the potential to significantly advance understanding of cardiac regeneration and improve the lives of those affected by heart disease.

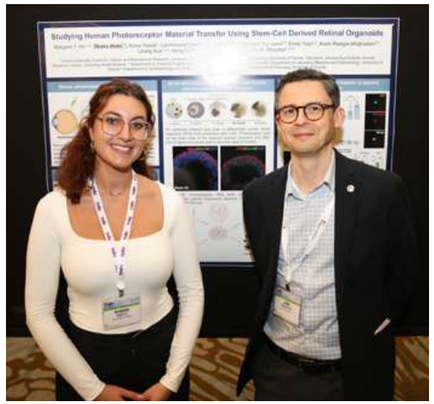
Through these important fellowships, SCN and its partners are supporting next-generation talent and working avidly to advance therapies and treatments for type 1 diabetes, women's heart and brain health, and multiple sclerosis — diseases affecting hundreds of thousands of Canadians.

The **SCN-MS Canada Postdoctoral Fellowship in Regenerative Medicine for Multiple Sclerosis** aims to pursue research, including stem cell and regenerative medicine approaches, to investigate, treat, or cure MS. This award is two years in duration. In 2023, **Dr. Elisabet Jakova** was awarded this fellowship. Her research aims to evaluate the potential of the protein Neuregulin-1 as a possible future treatment to halt MS progression and facilitate tissue repair, offering hope to those affected by this debilitating disease.

SUMMER STUDENTSHIPS

In 2023, SCN launched the Summer Studentships program to support senior undergraduate students in undertaking stem cell and regenerative medicine research for a minimum of 12 weeks. A total of 20 successful applicants, attending various Canadian academic institutions across the country, participated in the program. The program, intended to draw new talent into the field, has been well-received and is running again in 2024.





PHOTOS: Dhana Abdo and Yimin Wang presenting posters of their research at 2023 Till & McCulloch Meetings

SUMMER STUDENTSHIPS

Name	Supervisor	Host Institution
Dhana Abdo	Molly Shoichet	University of Toronto
Deborah Achuonye	Darrell Mousseau	University of Saskatchewan
Haider Bilal	Lorena Braid	Simon Fraser University
Kendra Bronsema	Samantha Payne	University of Guelph
Rachiel Chirara	Alexander Gregorieff	McGill University
Keerthana Chockalingam	Jeff Biernaskie	University of Calgary
Ragav Chona	Jing Wang	Ottawa Hospital Research Institute
Alessio Cusmano	Natasha Chang	Concordia University
Juan Pablo Escorcia Dominguez	Yun Li	The Hospital for Sick Children & University of Toronto
Alice Fours	Eleftherios Sachlos	York University
Camila Fuchs	Jessica Esseltine	Memorial University of Newfoundland
Matthew Ho	Marc Jeschke	McMaster University
Vandana Nathan	Katie Cockburn	McGill University
Yvonne Ping	Ian Rogers	University of Toronto
Pratyaksh Singhal	Galen Wright	University of Manitoba
Shelby Squires	Joel Ross	University of Prince Edward Island
Noah Tourigny	Julien Muffat	The Hospital for Sick Children
Marie Walker	Guang Yang	University of Calgary
Weiyi Wan	Jianyu Li	McGill University
Yimin Wang	Fabio Rossi	University of British Columbia

First established in 2022, the **MRC-SCN UK-Canada Exchange Program** provides new skills to researchers, including MSc/PhD students, post-doctoral fellows, research associates, technicians, and newly independent investigators, to build linkages between UK- and Canada-based scientists in RM. The first set of exchanges began in January 2023, with 10 Canadian research scientists travelling to the U.K. and nine visiting Canada from the U.K., to learn new skills, foster collaborations, and carry knowledge back to their respective research programs. In 2024, the second set of exchanges began, with five Canadian awardees travelling to the U.K. and five U.K. awardees visiting Canada.

My exchange to the University of Edinburgh was a key opportunity to begin developing a skill set in mathematical models, expanding my professional network, and initiating a collaborative effort between our labs. Thanks to the MRC & SCN, we are now actively working with Dr. Linus Schumacher's group in the UK to computationally model skeletal stem cell activity. This experience has positively impacted my graduate career, and I look forward to returning summer 2024 to continue our collaboration."

— Spencer Short, MD/PhD Candidate, University of Ottawa

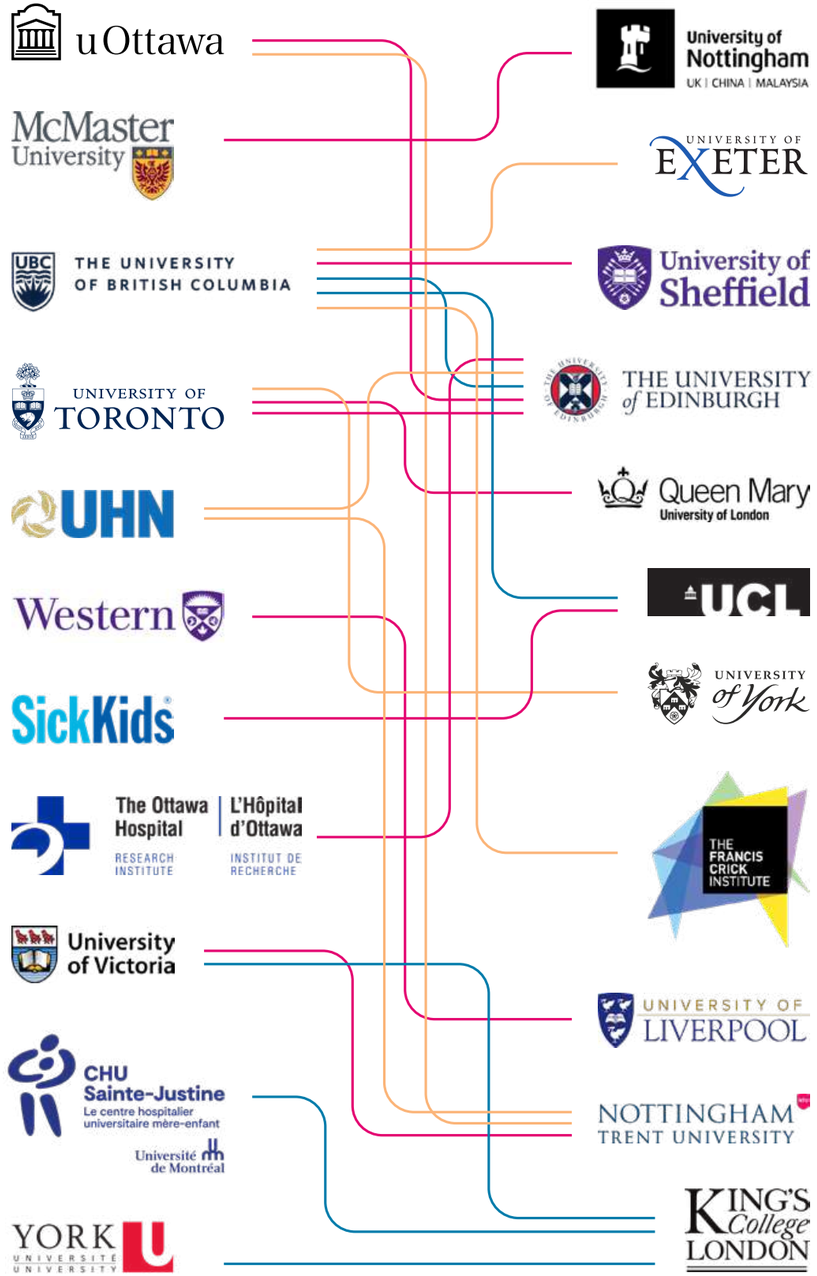
PHOTO: Dr. Linus Schumacher, Spencer Short, Rodrigo Garcia (From Dr. Schumacher's group)

Travel Awards

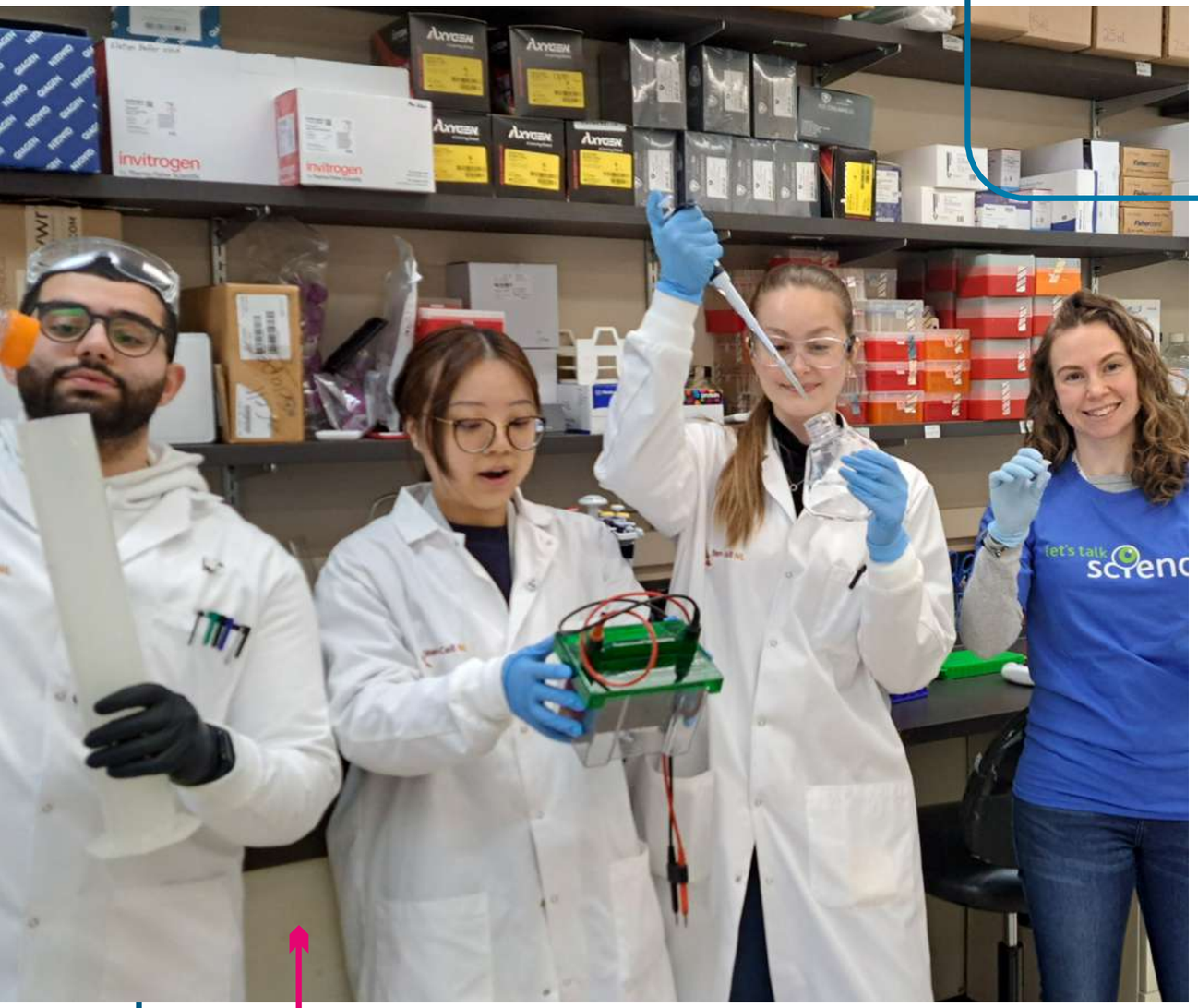
International Travel Awards — SCN offered 12 trainees and HQP financial support to attend a diverse array of stem cell and RM international conferences and meetings. Program participants were given a unique opportunity to showcase their projects to a global audience, hone their communications skills, and contribute to heightening the visibility of Canadian research abroad.

Technology Adoption Awards — For four successful applicants, SCN supported short visits to attend Canadian institutions/companies to facilitate a trainee or early career researcher in building core knowledge related to the use and deployment of a technology within their home lab.

MRC-SCN UK-CANADA EXCHANGES



LEGEND — Bidirectional — CAD > UK Only — UK > CAD Only



MOBILIZING **KNOWLEDGE**

Knowledge mobilization (KM) focuses on creating and leveraging research outputs and establishing avenues for research exchange, research translation, and awareness-building. It serves to enhance policy and decision-making, improve scientific and clinical trial design, and foster science culture and awareness with patient populations and the public at large. Ultimately, KM is integral to translating research investments into tangible health, social, and economic benefits for Canadians.

SCN's knowledge mobilization program focuses on creating opportunities for researchers and trainees to exchange, collaborate, and innovate. It also enables policy and regulatory conversations, provides public education and patient engagement, serves to foster commercialization opportunities, and contributes to a strong science culture in Canada.

DID YOU KNOW?

Stem Cell Network investigators are internationally known for their important contributions to the stem cell field, including through the active dissemination, or knowledge mobilization of ethics and policy research for the benefit of society and science.

Insights from the Network Blog

In fiscal 2023–2024, SCN released 14 blog posts from researchers across the country. Topics ranged from the latest advancements in RM research, to insights from trainees and a patient, showcasing the sector's rich diversity of thought. With more than 1,000 page views during the fiscal year, the blog's popularity continues to grow.

SHOWCASING INNOVATIVE STEM CELL AND REGENERATIVE MEDICINE RESEARCH

Over the last fiscal year, SCN advanced its knowledge mobilization program by working to raise the profiles of those in the Network and share more broadly with Canadians and decision-makers the latest advances in stem cell and RM research.

To highlight and amplify the novel work taking place across the country, SCN showcased several research projects on its digital platforms, including in its blog, Insights from the Network, covering topics from advancements in cell-based treatments for cystic fibrosis, to 3D printing for complex cancer models.

Also, over the course of the last year, SCN revamped and relaunched its Stem Cells from the Sofa video series. Originally designed by researchers for knowledge exchange during the COVID-19 pandemic, SCN refocused the series for a public audience covering digestible, RM-focused topics in 10 minutes or less. The first episode, "Unlocking the Power of Stem Cells," was released in May 2024.

ELEVATING PATIENT VOICES

Engaging with patient communities to better understand their needs is vital to advancing regenerative medicine research and therapies. Toward the end of the fiscal year, SCN convened its inaugural Patient Committee. Comprised of five patients and caregivers from across Canada, its members have lived experience with stem cell or RM therapies.

Charmain Brown — Pickering, ON
Her two young adult children underwent a gene therapy for Retinitis Pigmentosa.

Karen Peat — Vancouver, BC
Underwent a stem cell transplant for type 1 diabetes, named the 'Edmonton Protocol,' developed by Dr. James Shapiro and colleagues at the University of Alberta.

Sarah Benedict — Ottawa, ON
Underwent an autologous stem cell transplant for Neuromyelitis Optica Spectrum Disorder at The Ottawa Hospital under the care of Dr. Harold Atkins.

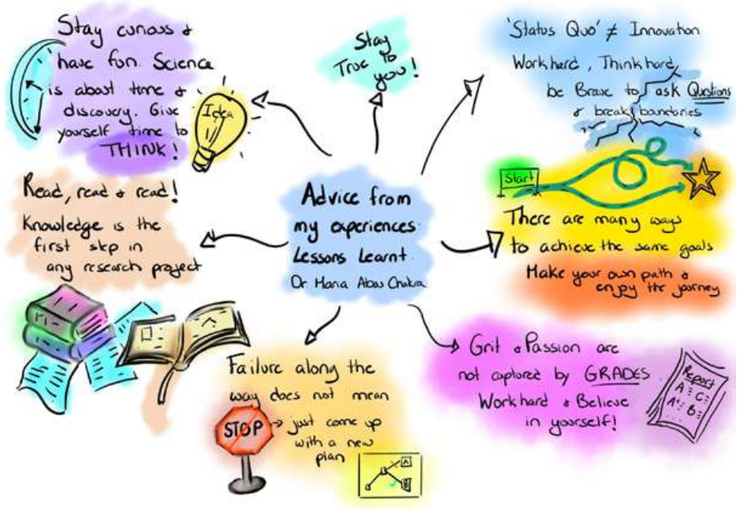
Joshua Robertson — Vancouver, BC
Participated in a multi-year, first-in-human stem cell trial for type 1 diabetes.

Kevin Bolusi — Montreal, QC
Participated in a clinical trial for third-degree burns under the care of Dr. Véronique Moulin from Université Laval.

The new committee's aims are: a) to assist SCN in establishing a framework for harnessing the lived experience of patients, and b) to inform the creation and direction of SCN's public-facing materials and initiatives.

EDUCATING CANADIAN YOUTH

StemCellTalks is a national outreach initiative that promotes stem cell discovery and dialogue in high- school classrooms across Canada. In fiscal 2023–2024, more than 600 high school students participated in stem cell science learning at seven events across the country. Made possible through a partnership between SCN and Let's Talk Science, *StemCellTalks* takes the form of a full day, highly interactive symposium. It offers youth a unique opportunity to connect with experts in the stem cell community and explore fundamental questions such as: *What is a stem cell? How are stem cells used? and What constitutes safe, effective, and ethical stem cell therapies?*



Graphic: Illustrated by Maria Abou Chakra for the Virtual Symposium on Let's Talk Science Fiction

2023–2024 STEMCELLTALKS SYMPOSIUMS

Date	Site	Theme	Participants
April 14, 2023	Montreal	Stem Cells Have Good Memories: Clinical Applications of Stem Cells in the Brain and Nervous System	50
April 14, 2023	Hamilton	Cellular Breakthroughs: Stem Cells and Cancer Therapy	69
May 5, 2023	Toronto	From Bench to Bedside and Beyond: Stem Cell Research and Personalized Medicine	98
May 19, 2023	Calgary	Stem Cells: Facts, Fiction, and the Future	189
May 19, 2023	Vancouver	Stem Cell Engineering: A Promising Tool for Regenerative Medicine	120
May 19, 2023	Guelph	Stem Cell Science in Cancer Treatment	60
March 28, 2024	Hamilton	Stem Cells and Cancer	50

For the second consecutive year, the SCN-Let's Talk Science partnership also included Virtual Symposiums. Held online, these sessions connected high school students and educators with leading STEM researchers and influencers to discuss their research, careers, current national-global issues in the field, and emerging topics. As in previous years, the goal of this series is to inspire, fuel critical thinking, and prepare high school students to meet the needs of tomorrow. National partners, including the Canadian Space Agency, ArcticNet, Royal Society of Canada, and Genome Canada, together hosted six virtual symposiums with over 2,000 students engaged, and two featuring SCN-funded investigators, Nevicia Case (as a moderator) and Maria Abou Chakra (as a presenter).

CANADIAN RESEARCHERS ON THE INTERNATIONAL STAGE

As in previous years, SCN undertook various activities to raise the global profile of Canadian RM research and help foster an international community of excellence and collaboration.

In 2023, SCN hosted the second annual meeting of the **Global Virtual Human Development Consortium** at the Till & McCulloch Meetings. Organized by SCN-funded researchers, this workshop drew together 51 researchers and trainees from across Canada and around the world, including Japan, Spain, the U.S., the U.K., Germany, and France. The Consortium brings together a global community of scholars and policy makers around the central goal of creating a computer-based simulator of human embryonic development. Its mission is to produce a state-of-the-art simulator with the ability to efficiently and effectively predict the outcome of cellular tissue and potential regenerative therapies. Ultimately, the goal is to have a tool that can simulate engineered developmental systems, leading to robust bioprocesses for manufacturing designer cells, tissues, and organs on demand.

SCN has continued its successful partnership with the international journal *Current Protocols in Stem Cell Biology*, highlighting the work and research advances of SCN investigators. This ongoing partnership with *Current Protocols* is a valuable opportunity for the Network to share and exchange research protocols and viewpoints at a global level, accelerating growth and discoveries.

During the year, SCN was thrilled to have participated in, and provided expertise to, the **International Society for Stem Cell Research's Standards Initiative for Pluripotent Stem Cell Research**. This initiative seeks to improve the rigour of stem cell research by developing standards and recommendations for best practices to improve research reproducibility. In September 2023, the Standards for Human Stem Cell Use in Research working group published a paper in Stem Cell Reports outlining recommendations, including reporting criteria, for scientists using human stem cells in basic research laboratories.

SCN also worked with international partners to organize two global training events:

- For the virtual **Global Regenerative Medicine Speaker Series**, SCN partnered with stem cell and regenerative medicine networks in Australia, Japan, Germany, Belgium, and South Korea to profile the research achievements of outstanding trainees.
- The **MRC-SCN UK-Canada Exchange Program** sought to provide new skills to researcher trainees and build linkages between UK- and Canada-based scientists in regenerative medicine. Twenty-nine researchers participated in the program.

Finally, in 2023, SCN continued engaging in national and international scientific conferences. Beyond ensuring the continued flow of new scientific information and highlighting Canadian expertise internationally, this involved promoting the development of valuable new research collaborations. SCN's participation included having its members contribute as speakers and its trainees participate in presenting scientific posters.

CONNECTING WITH CANADIANS

Over the course of the last fiscal year, SCN also worked to connect with the public and federal decision makers to highlight the innovative research being conducted across Canada in stem cell and regenerative medicine. Activities included, for example, participating in events such as the Canadian Science Policy Conference and luncheons hosted by Research Canada.

In October, for Stem Cell Awareness Day, SCN partnered with #ScienceUpFirst, to share a series of collaborative social media posts to debunk common myths about stem cells. The one-day campaign garnered 3,200 impressions in English and French. Throughout the fall, SCN also used social media to share a series of animated graphics that linked to web stories about clinical trials or stem cell facts. Active for over a six-month period, the campaign was highly successful and garnered over 4 million impressions in English and French across LinkedIn, Facebook, and Instagram.

In December, SCN and Research Canada partnered to co-host a Parliamentary Health Research Caucus Luncheon entitled, Breakthrough Stem Cell Research and the Power of Regenerative Medicine. The two-part, invitation-only event brought together top regenerative medicine and stem cell researchers to highlight the innovative work being done across the country and explore the future of the field. As part of the event, SCN's President and CEO, Cate Murray, moderated an expert panel that explored the complexities of access and affordability of cell and gene therapies for Canadians.

Finally, SCN participated in the Canadian Science Policy Center's Science Meet's Parliament Initiative, a four-month program that is focused on helping researchers learn about government decision-making processes and how to best translate science for public consumption. Having supported Dr. Penney Gilbert from the University of Toronto in 2023 to attend the program, SCN closed out the fiscal year by confirming support for Dr. Sheila Teves from the University of British Columbia to attend in the 2024 season.

CATALYZING CANADIAN COMPANIES

Over the past two decades, with SCN's research support, more than 25 biotechnology companies have been spun out or enhanced in Canada. Today, companies such as **Telescope Therapeutics, Synakis, and CEREBRO Therapeutics** are advancing novel cell therapies and RM products promising to benefit thousands of Canadians from coast to coast. Telescope Therapeutics, founded by Dr. Terry Hébert in Montréal, is developing an iPSC-based drug discovery platform to improve healthcare by offering personalized disease modelling. Meanwhile, Toronto-based Synakis is being incubated in the lab of Dr. Molly Shoichet and has developed a proprietary ocular hydrogel that can be injected into the eye to facilitate the treatment of retinal diseases, potentially reducing the need for surgery. CEREBRO Therapeutics, led by SCN investigators Drs. Samer Hussein and Martin Lévesque in Quebec City, is developing a novel gene therapy for Parkinson's disease — with broader implications for other neurodegenerative conditions such as Alzheimer's disease.

DID YOU KNOW?

Through research funding, SCN has catalyzed or enhanced over 25 Canadian biotechnology companies.

Though SCN is primarily a research and training network, it works to ensure SCN-funded research has a path forward to commercialization. The Network supports this journey through several mechanisms, including:

- **Providing** research funding support through programs such as the Fuelling Biotechnology Partnerships program, which allows academic researchers and emerging Canadian biotechnology companies to partner to develop or validate intellectual property;
- **Allowing** investigators to use a portion of their research awards to offset costs associated with intellectual property (IP) filings;
- **Enhancing** visibility to emerging companies seeking investment support by offsetting the costs associated with participating in national and international investment conferences, such as the BIO International Convention, the OBIO Investment Summit, and the Bloom Burton & Co. Healthcare Investor Conference;
- **Offering** free, bilingual commercialization resources focused on working with technology transfer offices, identifying, protecting, and developing IP; and,
- **Delivering** training for SCN investigators and trainees interested in commercialization.

In May 2023, SCN formalized its long-standing partnership with the **Ontario Bioscience Innovation Organization (OBIO)**. As a not-for-profit, OBIO's mandate is to further the commercialization of life science innovations. The partnership focuses on providing specialized training for Network scientists aspiring to launch companies, SCN trainees wishing to pursue careers in industry, and companies seeking investment and longer-term support.

During the fiscal year, SCN and OBIO collaborated on three new initiatives:

- **The Health to Business Bridge Program** — This initiative supports those pursuing PhDs in the life sciences in transitioning into industry careers. Originally planned with a capacity of 25, this program was in such high demand that SCN and OBIO ran the program twice in June 2023 — delivering it to 46 researchers.
- **The Business of Regenerative Medicine: One Stem Cell at a Time** — At the Till and McCulloch Meetings in October 2023, OBIO and SCN collaborated to offer a special event for all principal investigators (PIs), researchers, and aspiring entrepreneurs wishing to learn about the commercialization of RM products and hear from successful entrepreneurs, venture capitalists, and subject matter experts. A total of 99 people registered for the half-day program.
- **The Scientific Founder's Bootcamp** — This program equips aspiring entrepreneurs with the tools, networks, and knowledge required to launch or build their RM companies. The January 2024 session included 25 participants, with a second iteration launching in fiscal year 2024–2025.

Canadian Companies on the International Stage at BIO

From June 5 to 8, SCN was pleased to participate in the BIO International Convention in Boston. Attracting 14,000+ life sciences, biotechnology and pharma leaders from around the world, the week-long conference focused on the current and future state of biotech, including areas such as therapeutic frontiers, the business of biotech, regulatory and policy outlooks, and human capital.

SCN was delighted to support two companies to attend BIO – **Mesintel Therapeautics**, which has developed a proprietary target discovery platform to accelerate the development of therapeutics in areas of unmet medical need, and **Morphocell Technologies**, which focuses on advanced tissue engineering to develop effective treatments for liver disease.

COMPANY SPOTLIGHT

TRANSFORMING THE TREATMENT OF LIVER DISEASE: MORPHOCELL TECHNOLOGIES

Founded: 2018
Number of Employees: 12
Location: Montreal, Quebec
Most recent investment: $40 million in Series A financing

Based in Montréal, Morphocell Technologies is a preclinical regenerative medicine company that was born out of game-changing research originally funded by SCN.

Chronic liver disease affects one in four Canadians, costing the healthcare system an average of $39 million annually, including in-hospital procedures for liver disease patients and transplants.

In 2016, Drs. Massimiliano Paganelli and Claudia Raggi from Centre Hospitalier Universitaire Sainte-Justine set out to find an alternate approach for pediatric patients requiring liver transplants. Their proposed solution was to develop and test an implantable stem cell-derived liver tissue 'patch' to restore the liver function in patients, alleviating both the need for a transplant and immunosuppressant drugs.

It was a novel idea and SCN was excited to take a risk and invest nearly $200,000 in the research, an investment which ultimately led to the creation of Morphocell Technologies in 2018. Since then, Morphocell has unlocked an additional $8 million in investment, and, in April 2024, secured US$40 million in Series A financing to advance its novel cell therapy platform — one that promises to transform the treatment of liver disease.

COMPANY SPOTLIGHT

TOWARDS A CURE FOR DIABETES WITH BIOPRINTED TISSUE THERAPEUTICS: ASPECT BIOSYSTEMS

Founded: 2013
Number of Employees: 99+
Location: Vancouver, British Columbia
Most recent investment: $US2.6 billion deal

Based in Vancouver, Aspect Biosystems is a Canadian biotechnology company, led by Founder and CEO Tamer Mohamed, focused on developing bioprinted tissue therapeutics designed to replace, repair, or supplement biological functions in the body.

In early 2020, Dr. Timothy Kieffer, at the University of British Columbia, was awarded $500,000 by SCN to advance Aspect Biosystem's implantable 3D bio-printed cell therapy for delivering insulin-producing cells to treat type 1 diabetes. 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 was vital to securing a US$2.6 billion deal with Novo Nordisk in April 2023. The Aspect-Novo Nordisk collaboration will initially focus on developing bioprinted tissue therapeutics designed to maintain normal blood glucose levels without the need for immunosuppression, a potentially transformative treatment for people living with type 1 diabetes.

TILL & MCCULLOCH **MEETINGS**

Hosted by the Stem Cell Network, the Till & McCulloch Meetings (TMM) is Canada's premier stem cell and regenerative medicine research conference. Annually, TMM brings together scientists, clinicians, bioengineers, and ethicists, as well as representatives from industry, government, health, and non-profit sectors from Canada and abroad. The conference showcases Canada's place in the global stem cell ecosystem while providing a tremendous opportunity for networking and knowledge exchange.

TMM2023

More than 540 delegates attended the 2023 Till & McCulloch Meetings held in Toronto from October 23–25.

The three-day conference kicked off with a keynote address from Dr. Ya-Chieh Hsu, of Harvard University, who discussed how stress affects stem cells in the skin, opening new opportunities to understand how exposure to chronic stress can impact tissue regeneration.

The exceptional scientific program included presentations from outstanding speakers covering areas including new technologies in stem cell-based disease modelling, gene editing, and integrating artificial intelligence (AI) into research and clinical care.

TMM delegates also heard from two patient speakers, twin brothers Andre and Nathan Cordeiro. They spoke about their life-changing experience receiving a gene therapy to treat a rare inherited disorder, Leber congenital amaurosis (LCA), a progressive condition that often leads to severe vision loss.

DID YOU KNOW?

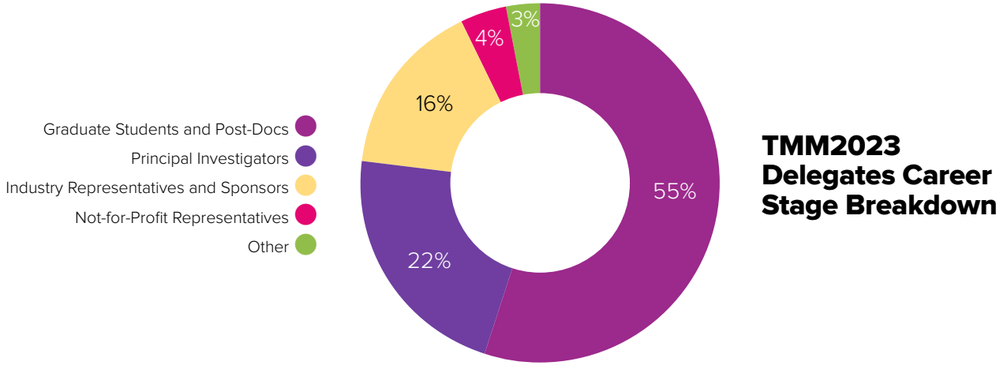
The Till & McCulloch Meetings are named after Canadian scientists James Till and Ernest McCulloch whose pioneering work demonstrated the existence of stem cells in the 1960s.

The **Till & McCulloch Award** is presented annually to a Canadian-based researcher who has made an exceptional contribution to global stem cell research in that year. For 2023, Dr. Gordon Keller, of the McEwen Stem Cell Institute and the University of Toronto, was nominated by his peers and selected by the Till & McCulloch Meetings Scientific Program Committee as the award recipient. He was chosen in recognition for his paper, published in *Cell Stem Cell, "Modelling human multi-lineage heart field development with pluripotent stem cells."* The work of Dr. Keller and his team will serve as a foundational resource for the future modelling of heart diseases and the production of heart cell types for use in developing new cardiac therapies. Also recognized for outstanding work in the stem cell and RM field was Dr. Murtaza Nagree, who received the 2023 Drew Lyall Award of Excellence. This honour is given annually to the lead trainee author of the highest-ranked abstract.

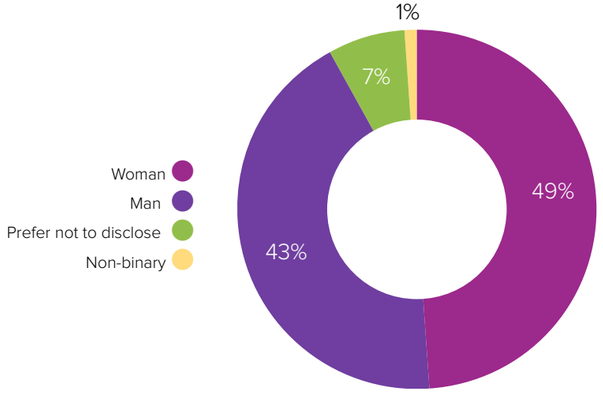
With record attendance, TMM2023 was another successful and memorable event. Planning is already underway for the 2024 Till & McCulloch Meetings, and we look forward to connecting with our community in Montréal from November 4 to 6.

Till & McCulloch Meetings Scientific Program Committee

In every TMM conference, this committee plays an integral role by ensuring scientific excellence and novel research are at the heart of the plenary program. The committee determines program themes and speakers. Its members also participate as conference session chairs, and they confirm the conference's award winners.



TMM2023 Delegates Career Stage Breakdown



TMM2023 Delegates Gender Breakdown

ADVANCING **EQUITY, DIVERSITY, & INCLUSION**

SCN is committed to advancing equity, diversity, and inclusion (EDI), employing an EDI lens in all its activities and programs. For several years, the Network has been working avidly to incorporate EDI considerations in all its activities — including its research, training, and knowledge mobilization programming.

This past fiscal year, the Stem Cell Network continued its dedicated efforts to advance EDI initiatives, create spaces for under-represented groups, and consider the inclusivity of its programming.

As part of its research funding process, applicants for SCN research awards must provide an EDI action plan for their respective laboratories. In fiscal year 2023–2024, SCN hosted two special sessions on EDI, focused on developing and implementing meaningful EDI action plans in research teams and projects. Led by accomplished scientist and EDI expert Dr. Imogen Coe, the first session was held for SCN's Research Management Committee members in June 2023 to help them better understand how to evaluate the EDI components of research applications and the factors contributing to a strong proposal. The second session was held as part of TMM2023, with similar content but adapted for individual researchers and their teams.

This past year, SCN also forged a new partnership with the University of British Columbia and its Faculty of Medicine's Centre of Excellence for Indigenous Health. This partnership enabled SCN to support 47 Indigenous youth taking part in the 2023 UBC Summer Science Program, many of whom travelled from remote areas. As part of the week-long camp, Indigenous high school students dove into several STEM fields — including a dedicated day on stem cell and regenerative medicine led by SCN-funded investigators and trainees. The

> **"This past year at TMM2023, the Stem Cell Network provided a valuable workshop on creating and maintaining inclusive cultures in research environments, led by Dr. Imogen Coe. This workshop stood out as one of the most impactful EDI sessions I have attended."**
>
> **—Tiffany Dang, PhD Candidate, University of Calgary**

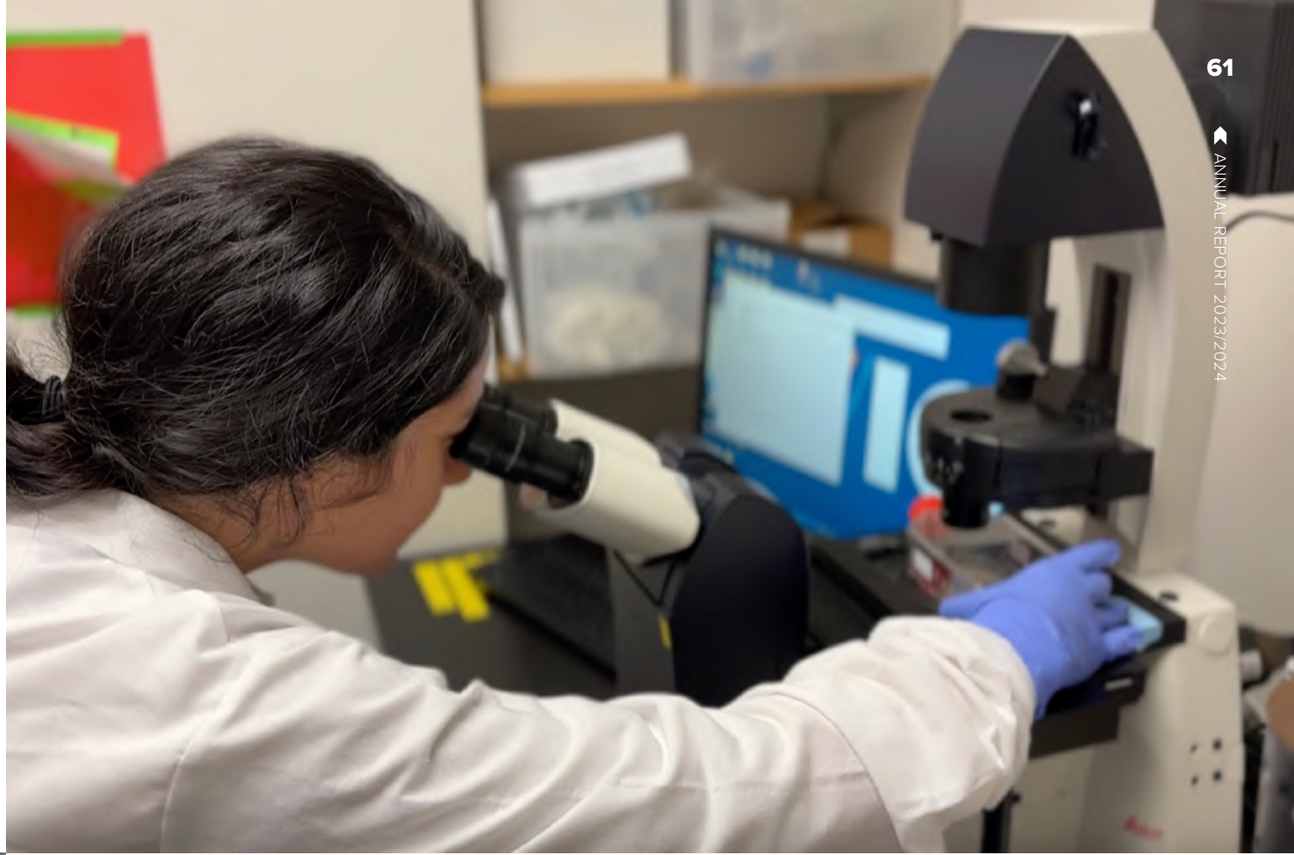
day was comprised of an instructional "Stem Cells 101" session focused on the potential of stem cells, interactive activities and crafts, and discussions about future careers with SCN investigators Drs. Bruce Verchere and Ly Vu.

Finally, SCN remains steadfastly committed to the Government of Canada's 50–30 Initiative to increase representation and inclusion of diverse groups in the workplace. In the past fiscal year, 50% of SCN's Board of Directors identified as women, with 44% of directors identifying from equity-deserving groups. Seventy-five percent of SCN's senior management team identified as women, while 47% of the Network's 19-member Research Management Committee identified as women.

Back for Another Year

SUPPORTING CAREER DEVELOPMENT FOR WOMEN TRAINEES THROUGH DARING TO DARE®

This past fiscal year, SCN was proud to once again hold the Daring to Dare® program as part of its training offerings alongside Tesselle Development. This specialized program is targeted specifically to women trainees in stem cell and regenerative medicine, focusing on career transitions and creating safe spaces to reflect, have conversations with peers, build confidence, and develop strategies to navigate the complexities of building a career in science. At the end of the fiscal year, 16 trainees were registered to attend the program — set to run between April to July 2024.



A LOOK AHEAD

This annual report showcases a multitude of activities undertaken for the 2023–2024 fiscal year and the incredible research and clinical trial advancements, collaborations, and partnership engagements supported by SCN.

Since 2001, SCN has worked diligently to create a strong pan-Canadian network by promoting collaboration and a multidisciplinary approach to advancing stem cell and RM research. The exceptional talent within our community promises a bright future for Canadian innovation in this field — a future with global impact. Through dedication and interconnectedness, the SCN community continues propelling the field of regenerative medicine forward, leading to a healthier and more prosperous Canada year after year.

Looking to the future, as we forge ahead, SCN is preparing to unveil a bold, new, and impactful blueprint: our *2025–2030 Strategic Plan*. This new roadmap will continue growing the Stem Cell Network by building a more robust research and training ecosystem, and accelerating next-generation science for a healthier tomorrow.

SCN'S BOARD, COMMITTEES & STAFF

BOARD OF DIRECTORS

Declan Hamill, Chair
Vice President, Policy, Regulatory, and Legal Affairs, Innovative Medicines Canada

Tamer Mohamed, Vice Chair
Founder & CEO, Aspect Biosystems

Nadine Beauger
Senior Director of the Therapeutic & Medical Device Accelerator at the Technology & Innovation Development Office (TIDO) of Boston Children's Hospital

Sharon Colle**
Former President & CEO, Fighting Blindness Canada

Julie Fradette**
Professor, Université Laval, Researcher, Centre recherche en organogénèse expérimentale (LOEX), at the CHU de Québec-Université Laval

Gail Garland
Former CEO, Ontario Bioscience Innovation Organization (OBIO®)

Michael Kallos
Professor and Head, Biomedical Engineering, University of Calgary

Ekat Kritikou*
Vice-Dean, Research and Development, Faculty of Medicine, Université de Montréal

Sharon Louis
Senior Vice President, Research & Development, STEMCELL Technologies

Gordon C. McCauley
President & CEO, adMare BioInnovations

Reza Moridi
Senior Fellow, Massey College, University of Toronto

Janet Rossant**
President & Scientific Director, Gairdner Foundation; Chief of Research Emeritus, The Hospital for Sick Children

Michael Rudnicki
Scientific Director, Stem Cell Network; Senior Scientist & Director, Regenerative Medicine Program and Sprott Centre for Stem Cell Research, Ottawa Hospital Research Institute

Rajat Sharma*
COO and CFO, Mitacs

Molly Shoichet*
University Professor, University of Toronto; Canada Research Chair, Tissue Engineering

Bernard Thébaud
Associate Scientific Director, Stem Cell Network; Senior Scientist, Regenerative Medicine, Ottawa Hospital Research Institute & CHEO Research Institute Neonatologist, Division of Neonatology, The Ottawa Hospital & CHEO; Professor of Pediatrics, University of Ottawa; University of Ottawa Partnership Research Chair in Regenerative Medicine

As of March 31, 2024
**Term began in November 2023*
***Term ended in November 2023*

RESEARCH MANAGEMENT COMMITTEE

Michael Rudnicki, Chair
Scientific Director, Stem Cell Network; Senior Scientist and Director, Regenerative Medicine Program and Sprott Centre for Stem Cell Research, Ottawa Hospital Research Institute

Bernard Thébaud, Vice Chair
Associate Scientific Director, Stem Cell Network; Senior Scientist, Regenerative Medicine, Ottawa Hospital Research Institute and CHEO Research Institute Neonatologist, Division of Neonatology, The Ottawa Hospital and CHEO; Professor of Pediatrics, University of Ottawa; University of Ottawa Partnership Research Chair in Regenerative Medicine

Maura Campbell*
President and CEO, Ontario Bioscience Innovation Organization (OBIO®)

Wing Chang
Director of Tissue Stem Cell Biology, STEMCELL Technologies Inc.

Dean Fergusson
Senior Scientist and Director, Clinical Epidemiology Program, Ottawa Hospital Research Institute; Full Professor, Departments of Medicine, Surgery, and School of Epidemiology and Public Health, University of Ottawa; OHRI/uOttawa Clinical Epidemiology Program Endowed Chair; Scientific Lead, Ontario SPOR SUPPORT Unit, Government of Ontario and the Canadian Institutes of Health Research

David Glass**
Vice-President, Research, Regeneron Pharmaceuticals; Senior Lecturer, Department of Cell Biology, Harvard Medical School; Adjunct Professor, Department of Genetics and Development, Columbia University Vagelos School of Medicine

Corinne Hoesli*
Head of the Stem Cell Bioprocessing Laboratory, McGill University; co-director of the Quebec Cell, Tissue and Gene Therapy Network (ThéCell)

Samer Hussein
Associate Professor, Université Laval; Researcher, Oncology Division, Centre Hospitalier Universitaire (CHU) de Québec-Université; Laval Research Center

Natasha Kekre
Scientist, Clinical Epidemiology Program, Ottawa Hospital Research Institute; Hematologist, Transplant and Cellular Therapy Program, The Ottawa Hospital; Associate Professor, Faculty of Medicine, University of Ottawa

Gregory Korbutt
Professor, Department of Surgery, University of Alberta; Scientific Director, Alberta Cell Therapy Manufacturing Facility; Director, Alberta Diabetes Institute's Histology Core Lab

Debra Matthews
Assistant Director for Science Programs, Johns Hopkins Berman Institute of Bioethics; Associate Professor, Department of Genetic Medicine, Johns Hopkins University School of Medicine

M. Cristina Nostro
Senior Scientist, McEwen Stem Cell Institute, University Health Network; Associate Professor, University of Toronto

Chantale Pambrun**
Senior Medical Director, Innovation and Portfolio Management, Canadian Blood Services; Adjunct Professor, Department of Pathology and Laboratory Medicine, University of Ottawa

Michael Parr**
Director of Formulations and Process Development, Evonik Vancouver Laboratories

Aime Phinney
Senior Director, Program Development and Partnership team, adMare BioInnovations

Cheryle Seguin**
Associate Professor, Department of Physiology and Pharmacology, Western University

Nika Shakiba*
Assistant Professor, School of Biomedical Engineering, University of British Columbia

Leigh Turner***
Associate Professor, University of Minnesota Center for Bioethics, School of Public Health, and College of Pharmacy.

Michael Underhill**
Professor, Department of Cellular and Physiological Sciences, University of British Columbia

As of March 31, 2024
**Term began in November 2023*
***Term ended in November 2023*
****Term ended in June 2023*

EARLY CAREER RESEARCHER COMMITTEE

Amy Wong, Chair
Assistant Professor, Laboratory Medicine & Pathobiology, University of Toronto; Scientist, Developmental & Stem Cell Biology, The Hospital for Sick Children

Natasha Chang
Assistant Professor, Department of Biochemistry, McGill University

Daniel Coutu
Assistant Professor, Department of Cellular & Molecular Medicine, University of Ottawa; Scientist, Regenerative Medicine Program, Ottawa Hospital Research Institute; Research Chair, Regenerative Orthopedic Surgery, The Ottawa Hospital

Janelle Drouin-Ouellet
Assistant Professor, Université de Montréal

Roman Krawetz
Associate Professor, University of Calgary

Benjamin Lindsey
Assistant Professor, University of Manitoba

Ly Vu
Scientist, BC Cancer; Assistant Professor, Faculty of Pharmaceutical Sciences, University of British Columbia

Ma'n Zawati
Assistant Professor & Executive Director, Centre of Genomics and Policy, Faculty of Medicine, McGill University

TRAINING & EDUCATION COMMITTEE

Andrew Pepper, Chair
Assistant Professor, Department of Surgery, Division of Surgical Research, University of Alberta

Mohsen Akbari
Associate Professor, Mechanical Engineering, and Director of the Laboratory for Innovations in Microengineering (LiME), University of Victoria

Jessica Esseltine
Assistant Professor, Division of BioMedical Sciences, Cancer and Development, Memorial University of Newfoundland

May Griffith
Professor, Department of Ophthalmology, Faculty of Medicine, Université de Montréal

Matthew Hildebrandt
Product Manager, STEMCELL Technologies

Samer Hussein
Associate Professor, Université Laval; Researcher, Oncology Division, Centre Hospitalier Universitaire (CHU) de Québec-Université; Laval Research Center

Golnaz Karoubi
Scientist and Principal Investigator, Toronto General Hospital Research Institute; Assistant Professor, University of Toronto

Terry Sachlos
Director, Stem Cell Engineering Lab, York University; Associate Professor, York University

TRAINEE COMMUNICATIONS COMMITTEE

Morten Ritso, Chair
Postdoctoral Research Fellow, University of British Columbia

Laura Stankiewicz, Vice Chair
PhD Candidate, University of British Columbia

Nevicia Case
Postdoctoral Fellow, University of Alberta

Fanny-Meï Cloarec-Ung
PhD Student, Université de Montréal

Amelinda Firdauzy
MSc Student, Simon Fraser University

Jules Granet
PhD Student, McGill University

Courtney Irwin
MSc Student, University Toronto

Holly Jiogo
MSc Student, McGill University

Ahmed Kabil
PhD Candidate, University of British Columbia

Oreoluwa Kolade
PhD Student, University of Toronto

Coulter Montague Szakaly
MSc Student, University Health Network

Haochen Sun
MSc Student, University of Calgary

Parisa Varshosaz
PhD Candidate, Laurentian University

Tyler Wenzel
Postdoctoral Fellow, University of Saskatchewan

Fereshteh Younesi
PhD Student, University of Toronto

PATIENT COMMITTEE

Sarah Benedict

Kevin Bolusi

Charmain Brown

Karen Peat

Joshua Robertson

STAFF[1]

Ellie Arnold
Training Specialist

Mike Brittain
Accounting Coordinator

Rebecca Cadwalader
Director, Corporate Events & Governance

Jen Chappell
Digital Communications Specialist

Rinji Dawurang
Database Specialist

Jon Draper
Vice-President, Research & Training

Deanna Guitard
Director of Finance

Trang Ho-Nguyen
Social Media Specialist

Seohyun In
Accounting Specialist

Gail Lagowski
Human Resources

Cate Murray
President & CEO

Samantha Rae Ayoub
Vice-President, Communications & Knowledge Mobilization

Jonathan Rudnicki
Communications Assistant and Writer

Alison Ryan
Executive Assistant

Gustavo Scola
Research and Funding Specialist

Shannon Sethuram
Vice-President, Corporate Services

Joanna Valsamis
Director, Knowledge Mobilization

The compensation policy for our staff includes job classifications and related salary ranges. For positions that exceeded $100,000 in the year ended March 31, 2024, the following were the annual salary ranges: President/CEO and Vice-Presidents $150,000–$300,000; Managers and Directors $80,000–$150,000.

1 Staff listing as of March 31, 2024

FINANCIAL STATEMENTS

MARCH 31, 2024

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LOGANKATZ
CHARTERED PROFESSIONAL ACCOUNTANTS
COMPTABLES PROFESSIONNELS AGRÉÉS

INDEPENDENT AUDITORS' REPORT

To the Members of Stem Cell Network:

Opinion
We have audited the financial statements of Stem Cell Network ("SCN"), which comprise the statement of financial position as at March 31, 2024, and the statements of revenues and expenditures, changes in net assets and cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of SCN as at March 31, 2024, and its results of operations and its cash flows for the year then ended in accordance with Canadian accounting standards for not-for-profit organizations (ASNFPO).

Basis for Opinion
We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the *Auditors' Responsibilities for the Audit of the Financial Statements* section of our report. We are independent of SCN in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of Management and Those Charged with Governance for the Financial Statements
Management is responsible for the preparation and fair presentation of these financial statements in accordance with ASNFPO, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing these financial statements, management is responsible for assessing SCN's ability to continue as a going concern, disclosing, as applicable, matters related to a going concern and using the going concern basis of accounting unless management either intends to liquidate SCN or to cease operations, or has no realistic alternative to do so.

Those charged with governance are responsible for overseeing SCN's financial reporting process.

Auditors' Responsibilities for the Audit of the Financial Statements
Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

LOGANKATZ
CHARTERED PROFESSIONAL ACCOUNTANTS
COMPTABLES PROFESSIONNELS AGRÉÉS

INDEPENDENT AUDITORS' REPORT (continued)

Auditors' Responsibilities for the Audit of the Financial Statements (continued)
As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of SCN's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on SCN's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause SCN to cease to continue as a going concern.

- Evaluate the overall presentation, structure, and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during the audit.

Logan Katz LLP

Chartered Professional Accountants
Licensed Public Accountants

Ottawa, Canada
July 4, 2024

STEM CELL NETWORK

STATEMENT OF FINANCIAL POSITION

AS AT MARCH 31, 2024

	2024	2023
ASSETS		
CURRENT ASSETS		
Cash	$ 1,758,053	$ 2,257,264
Accounts receivable	22,407	9,138
Harmonized sales taxes recoverable	173,980	62,238
Prepaid expenditures	588,870	372,990
	2,543,310	2,701,630
RESTRICTED CASH EQUIVALENTS (Note 2)	50,000	50,000
CAPITAL ASSETS (Note 3)	42,227	34,396
	$ 2,635,537	$ 2,786,026
LIABILITIES AND NET ASSETS		
CURRENT LIABILITIES		
Accounts payable and accrued liabilities (Note 4)	$ 74,931	$ 159,617
DEFERRED CONTRIBUTIONS (Note 5)	716,285	1,308,525
NET ASSETS		
Invested in capital assets	42,227	34,396
Unrestricted	1,752,094	1,233,488
Externally restricted (Note 2)	50,000	50,000
	1,844,321	1,317,884
	$ 2,635,537	$ 2,786,026

Commitments (Note 6)
Economic dependence (Note 9)
Financial instruments (Note 10)

ON BEHALF OF THE BOARD:

_____ _____

STEM CELL NETWORK

STATEMENT OF REVENUES AND EXPENDITURES

YEAR ENDED MARCH 31, 2024

	2024	2023
REVENUES		
Innovation, Science and Economic Development Canada Grant (Note 5)	$ 15,592,240	$ 13,831,964
Annual conference sponsorship and registration	518,203	454,446
Contributed services in-kind (Note 8)	71,280	71,280
Interest	140,900	51,058
Other	10,050	1,200
	16,332,673	14,409,948
EXPENDITURES		
Administration and general support (Notes 7 and 8)	1,458,125	1,005,134
Amortization	15,329	13,199
Annual conference (Note 7)	919,299	841,546
Business development	64,554	26,897
Communication and outreach (Note 7)	1,596,666	1,451,558
Loss on disposal of capital assets	-	3,572
Research programs (Note 7)	10,691,374	10,196,198
SCN board and committees	96,380	4,983
Training program (Note 7)	964,509	595,768
	15,806,236	14,138,855
EXCESS OF REVENUES OVER EXPENDITURES	$ 526,437	$ 271,093

STEM CELL NETWORK

STATEMENT OF CHANGES IN NET ASSETS

YEAR ENDED MARCH 31, 2024

	2024				2023
	Invested in capital assets	Unrestricted	Externally restricted	Total	Total
BALANCES AT BEGINNING OF YEAR	$ 34,396	$ 1,233,488	$ 50,000	$ 1,317,884	$ 1,046,791
Excess of revenues over expenditures	-	526,437	-	526,437	271,093
Amortization of capital assets	(15,329)	15,329	-	-	-
Acquisition of capital assets	23,160	(23,160)	-	-	-
BALANCES AT END OF YEAR	$ 42,227	$ 1,752,094	$ 50,000	$ 1,844,321	$ 1,317,884

STEM CELL NETWORK

STATEMENT OF CASH FLOWS

YEAR ENDED MARCH 31, 2024

	2024	2023
OPERATING ACTIVITIES		
Excess of revenues over expenditures	$ 526,437	$ 271,093
Adjustments for:		
Amortization	15,329	13,199
Recognition of deferred contributions	(15,592,240)	(13,831,964)
Loss on disposal of capital assets	-	3,572
Net change in non-cash working capital:		
Accounts receivable	(13,269)	(8,960)
Harmonized sales taxes recoverable	(111,742)	(20,974)
Prepaid expenditures	(215,880)	(123,284)
Accounts payable and accrued liabilities	(84,686)	39,024
	(15,476,051)	(13,658,294)
FINANCING ACTIVITIES		
Proceeds from deferred contributions	15,000,000	15,000,000
INVESTING ACTIVITIES		
Acquisition of capital assets	(23,160)	(32,232)
(DECREASE) INCREASE IN CASH	(499,211)	1,309,474
Cash position at beginning of year	2,257,264	947,790
CASH POSITION AT END OF YEAR	$ 1,758,053	$ 2,257,264

STEM CELL NETWORK

NOTES TO FINANCIAL STATEMENTS

YEAR ENDED MARCH 31, 2024

GENERAL

The Stem Cell Network ("SCN") was established on November 19, 2001 as an independent not-for-profit corporation and accordingly, is exempt from income taxes. The mission of SCN is to be a catalyst for enabling translation of stem cell research into clinical applications, commercial products or public policy.

As of March 2022, SCN was approved for Innovation, Science and Economic Development Canada ("ISEDC") funding of $45,000,000 for fiscal years 2023 to 2025 inclusive.

As of December 2023, SCN was approved for funding from ISEDC of $48,485,800 under the Strategic Science Fund ("SSF") for fiscal years 2026 to 2029 inclusive.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

These financial statements have been prepared in accordance with Canadian accounting standards for not-for-profit organizations ("ASNFPO") and include the following significant accounting policies:

Revenue Recognition

SCN follows the deferral method of accounting for contributions. Restricted contributions are recognized as revenue in the year in which related expenditures are incurred. Unrestricted contributions are recognized as revenue when received or receivable if the amount to be received can be reasonably estimated and collection is reasonably assured.

Grants
Grant revenue represents funds received from the federal government for specific initiatives administered by SCN. Grant revenue is recognized as revenue when costs are incurred in relation to the specific initiatives. Grant funds that have not been fully spent at year end are reported as deferred contributions.

Annual conference sponsorship and registration
Registration fees and sponsorships to events and conferences, are recognized as revenue in the year the event is held.

Interest and other revenue
Amounts received for interest income and other revenue are recognized as revenue when received or receivable if the amount can be reasonably estimated and collection is reasonably assured.

Contributed Services In-Kind
Because of the difficulty of determining their fair value, contributed services are not recognized in the financial statements unless a fair value can be reasonably estimated. These services are used in the normal course of operations and the provider of the services has explicitly defined the value of the services to SCN.

1. **SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES** (continued)

Research Programs Expenditures

Costs relating to research programs are recorded as expenditures when the expenditure is incurred.

The research grants are determined to become payable at the time when the board of directors approves the grant and the grant recipient investigator has submitted a signed acceptance of award and related documentation formally acknowledging the grant. Research grants that have been identified as payments in future periods are disclosed as commitments.

Should the recipients of the grants not fulfill their obligations, the funding will need to be returned to SCN. The return of funding is accounted for as a reduction to the research grant expenditure when it is determined by the board to become repayable.

Allocation of Expenditures

SCN allocates salaries and benefits to applicable programs based on an estimate of the percentage of time spent on the program.

Cash and Cash Equivalents

Cash and cash equivalents include cash on hand, cash held on deposit with a Canadian chartered bank and highly liquid investments with original maturities of twelve months or less, including cashable guaranteed investment certificates. The fair value of cash equivalents approximates the amounts shown in the financial statements.

Foreign Currency Transactions

SCN uses the temporal method to translate its foreign currency transactions.

Monetary assets and liabilities are translated at the rate of exchange in effect at year end. Other assets and liabilities are translated at their historic rates. Items appearing in the statement of revenues and expenditures are translated at annual average exchange rate. Exchange gains and losses are included in the statement of revenues and expenditures.

Capital assets

Capital assets are recorded at cost. Amortization is provided using the straight-line basis over the following period:

Computer equipment	3 years

Amortization of an asset commences in the month of acquisition. No amortization is recorded in the month of disposal.

1. **SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES** (continued)

Capital assets (continued)

When the SCN observes conditions that indicate that a capital asset is impaired, the net carrying amount of the capital asset is written down to the asset's fair value or replacement cost.

Financial Instruments

Measurement of financial instruments
SCN initially measures its financial assets and liabilities at fair value. SCN subsequently measures all its financial assets and financial liabilities at amortized cost.

Financial assets measured at amortized cost include cash, accounts receivable and restricted cash equivalents.

Financial liabilities measured at amortized cost include accounts payable and accrued liabilities.

Impairment
Financial assets measured at amortized cost are tested for impairment when there are indicators of impairment. The amount of the write-down is recognized in the statement of revenues and expenditures. The previously recognized impairment loss may be reversed to the extent of the improvement, directly or by adjusting the allowance account, provided it is no greater than the amount that would have been reported at the date of the reversal had the impairment not been recognized previously. The amount of the reversal is recognized in the statement of revenues and expenditures. The accounts receivable is netted by an allowance for doubtful accounts of $Nil (2023 - $Nil).

Transaction Costs
Transaction costs are financing fees or costs that are directly attributable to the financial assets or financial liabilities origination, acquisition, issuance or assumption. Transaction costs relating to financial assets or financial liabilities that are carried at amortized cost or cost are netted against the carrying value of the assets or liabilities and then recognized over the expected life of the instrument using the effective interest method. All other transaction costs are recognized in the statement of revenues and expenditures in the period incurred.

Use of Estimates

These financial statements have been prepared by management in accordance with ASNFPO and accordingly, require management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amount of revenues and expenditures during the reporting period. Actual results could differ from these estimates. Significant estimates in the financial statements include the estimated useful lives of capital assets, the potential recovery of research grants awarded, the amount of certain accrued liabilities and the allocation of salaries and benefits to applicable programs. These estimates are reviewed periodically and adjustments are made, as appropriate, in the statement of revenues and expenditures in the year they become known.

2. RESTRICTED CASH EQUIVALENTS

Restricted cash equivalents are amounts invested in a guaranteed investment certificate (GIC) which is held by SCN's bank as collateral for their credit card facility. The GIC bears interest at 2.25% and matures in March 2025.

3. CAPITAL ASSETS

	2024			2023
	Cost	Accumulated Amortization	Net	Net
Computer equipment	$ 116,257	$ 74,030	$ 42,227	$ 34,396

4. ACCOUNTS PAYABLE AND ACCRUED LIABILITIES

SCN does not have any government remittances owing at year end.

5. DEFERRED CONTRIBUTIONS

Innovation, Science and Economic Development Canada ("ISEDC")

SCN was approved for ISEDC funding of $15,000,000 per year under the terms of the ISEDC program, for a three year term ending March 31, 2025. ISEDC funds are managed in accordance with the funding guidelines contained in the funding agreement between ISEDC and SCN, whereby the funding transits directly to SCN.

Changes in the deferred contributions balance for the year are as follows:

	2024	2023
Balance at beginning of year	$ 1,308,525	$ 140,489
Restricted contributions received	15,000,000	15,000,000
Amount recognized as revenue	(15,592,240)	(13,831,964)
Balance at end of year	$ 716,285	$ 1,308,525

6. COMMITMENTS

Office Premises

SCN has entered into a lease for office premises which commences July 2024 and expires June 2031. The minimum aggregate annual lease payments to expiry, including an estimate for operating costs, are $1,060,993. The future lease payments for the next five years are as follows:

2025	$ 108,638
2026	146,827
2027	148,935
2028	149,726
2029	149,726

Research and Grants

SCN has agreed to provide funding for research and grants related to various programs, trials and studies that are not accrued in SCN's financial statements as they are not yet payable. SCN future commitments related to these research grants amounts to $9,766,565 and are allocated as follows:

	Round 1	Round 2	Total
2025	$ 5,296,864	$ 4,469,701	$ 9,766,565

7. ALLOCATION OF EXPENDITURES

Salaries and benefits of $2,226,695 (2023 - $1,944,705) have been allocated as follows:

	2024	2023
Administration and general support	$ 701,175	$ 594,991
Annual conference	92,890	63,219
Communication and outreach	949,636	904,112
Research programs	288,558	219,662
Training program	194,436	162,721
	$ 2,226,695	$ 1,944,705

STEM CELL NETWORK

NOTES TO FINANCIAL STATEMENTS

YEAR ENDED MARCH 31, 2024

8. IN-KIND CONTRIBUTIONS

Under an agreement, the Ottawa Hospital Research Institute ("OHRI") provides administrative support services as well as information technology and human resources support, storage space, and furniture, without charging SCN. The value of the in-kind contributions received for services is estimated to be $71,280 (2023 - $71,280) and is included in administration and general support expenditures.

9. ECONOMIC DEPENDENCE

SCN received ISEDC funding under a three year funding agreement, ending March 31, 2025. Revenues pertaining to this grant account for 95% (2023 - 95%) of SCN's revenues.

SCN has secured funding through an agreement with the ISEDC for the fiscal years ending March 31, 2026 to 2029, inclusive, totaling $48,485,800.

10. FINANCIAL INSTRUMENTS

Risks

It is management's opinion that SCN is not exposed to significant credit risk, interest rate risk, liquidity, or concentrations of risk through its financial instruments. The following analysis provides a measure of SCN's risk exposure as at the statement of financial position date:

Currency Risk
Currency risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates. SCN holds activities in and incurs expenditures with foreign countries. Consequently, some assets and current liabilities are exposed to foreign exchange fluctuations. As at March 31, 2024 prepaid expenditures of $57,575 and $26,425 are carried in US dollars and Pound Sterling, respectively, (2023 - $54,724 and $30,825 US dollars and Pound Sterling, respectively) and converted into Canadian dollars. Any foreign exchange gains and losses on such transactions are recorded with the corresponding expenditure in the statement of revenues and expenditures.

Credit Facility

SCN has access to $100,000 secured credit on a credit card (Note 2), bearing interest at 19.99% per annum, for which the balance is required to be fully paid on a monthly basis. The credit used at March 31, 2024 amounts to $7,385 (2023 - $21,452) and is included in the balance of accounts payable and accrued liabilities.

APPENDIX

SCN 2022–2025 ROUND 2 FUNDING RESULTS

CLINICAL TRIALS AWARDS

Supporting early-stage clinical trial projects with high translational potential.

Lucie Germain, Université Laval (Québec) Véronique Moulin (Université Laval), Richard Bazin (Université Laval), Isabelle Burnette (Hôpital Maisonneuve-Rosemont), Clara Chan (Toronto Western Hospital—University of Toronto), Jason Guertin (Université Laval), Bartha Knoppers (McGill University Health Centre), Ralph Kyrillos (Université Laval), Mohib-Wadie (Centre de santé et de services sociaux de l'Outaouais, Hôpital de Hull), Michel Ouellet (Université Laval), Allan Zawati (Toronto Western Hospital, University of Toronto), Ma'n Zawati (McGill University)	Clinical trial of cultured epithelial corneal autografts for the treatment of Canadians with limbal stem cell deficiency	$603,600
Marc Jeschke, McMaster University (Ontario)	A phase I, single-blind, randomized study of safety of cellularized Integra® using autologous burn-derived MSCs	$298,000
Sowmya Viswanathan, University Health Network (Ontario) Tim Dwyer (Women's College Hospital), Osvaldo Espin-Garcia (The University of Western Ontario), Rajiv Gandhi (University Health Network), Mohit Kapoor (University Health Network), Anthony Perruccio (University Health Network), Lynn Saber (University Health Network), Liz Scheid (University Health Network), Kala Sundararajan (University Health Network), Nick Bansback (University of British Columbia), Jaskarndip Chahal (Women's College Hospital), Christopher Kim (Toronto Western Hospital), Darrell Ogilvie-Harri (University Health Network)	Autologous Bone Marrow Aspirate Concentrate or Lipoaspirate Concentrate for OsteoArthritis: ABLE OA Clinical Trial	$750,000

ACCELERATING CLINICAL TRANSLATION AWARDS

Supporting multi-disciplinary research that is moving towards the clinic within five years or is addressing a key research question associated with an ongoing clinical trial.

Véronique Moulin, Université Laval (Québec) Lucie Germain (Université Laval), Ma'n Zawati (McGill University), Chanel Beaudoin-Cloutier (Université Laval), Sue-Ling Chang (CHU de Québec - Université Laval)	Allogeneic dermis to accelerate the production of a tissue-engineered skin substitute to treat Canadian burn patients	$600,000
Bernard Thébaud, Ottawa Hospital Research Institute (Ontario) Dean Fergusson (Ottawa Hospital Research Institute), Justin Presseau (Ottawa Hospital Research Institute), Hartmut Grasemann (University of Toronto), Matthias Griese (Ludwig-Maximilians-Universität München, LMU), Manoj Lalu (Ottawa Hospital Research Institute), Hanns Lochmuller (Children's Hospital of Eastern Ontario Research Institute Inc), Lawrence Nogee (Johns Hopkins University School of Medicine), Maria Pierro (M. Bufalini Hospital Ausl Romagna), Nicolaus Schwerk (Medizinische Hochschule Hannover), Kednapa Thavorn (Ottawa Hospital Research Institute)	AAVenger-B: Adeno-Associated Virus Engineered Gene Epithelial progenitor cell Regeneration for surfactant proteinB deficiency	$599,800

ACCELERATING CLINICAL TRANSLATION AWARDS

Bruce Verchere, University of British Columbia (British Columbia) Francis Lynn (University of British Columbia), Timothy Kieffer (University of British Columbia), Megan Levings (University of British Columbia)	Genetic engineering of hESC-derived insulin-producing cells to improve graft outcomes in type 1 diabetes	$600,000
Juan Carlos Zúñiga-Pflücker, Sunnybrook Research Institute (Ontario) Jonas Mattsson (University Health Network), Donna Wall (The Hospital for Sick Children)	Production of progenitor T cells for immune-reconstitution and targeted immunotherapies (ProTIMM)	$599,875
Peter Zandstra, University of British Columbia (British Columbia) Yale Michaels (CancerCare Manitoba), Roser Vento-Tormo (Wellcome Sanger Institute)	PSC-derived immune cells as an advanced delivery vehicle for protein therapeutics	$400,000

FUELLING BIOTECHNOLOGY PARTNERSHIPS

Supporting academic partnerships with emerging Canadian regenerative medicine biotechnology companies to bring innovative technologies or therapies to the clinic or market.

C. Florian Bentzinger, Université de Sherbrooke (Québec)	Mobilizing endogenous repair in muscular dystrophy	$398,600
Michael Fehlings, University Health Network (Ontario) Mohammad Khazaei (Inteligex Inc.), Michael Laflamme (University of Toronto — University Health Network)	Translation of cGMP grade oligodenrogenic NPCs (oNPCs) for the treatment of traumatic cervical spinal cord injury	$400,000
Massimiliano Paganelli, Centre Hospitalier Universitaire Sainte-Justine (Québec) Christopher Rose (Centre de Recherche du Centre Hospitalier de l'Université de Montréal)	iPSC-derived Encapsulated Liver Tissue: extending the indication to acute-on-chronic liver failure	$400,000
Fabio Rossi, University of British Columbia (British Columbia) Bettina Willie (McGill University), Frank Rauch (McGill University)	Bone targeted EP4 agonists as therapeutics for muscular dystrophy	$399,821

IMPACT AWARDS

Supporting proof-of-principle experiments, including novel therapeutic or technical approach development, that will drive regenerative medicine therapies forward.

Yan Burelle, University of Ottawa (Ontario) Gilles Gouspillou (Université du Québec à Montréal), Mireille Khacho (University of Ottawa)	Targeting mitochondrial quality control to promote muscle regeneration	$224,520
Colin Crist, Sir Mortimer B. Davis-Jewish General Hospital (Québec) Jonathan Britt (McGill University)	Shining light on muscle regeneration: MuSC mediated delivery of optogenetic contractile properties to skeletal muscle	$250,000
Junio Dort, University of Ottawa (Ontario) C. Florian Bentzinger (Université de Sherbrooke)	Novel therapeutic compounds targeting G-coupled receptors to enhance muscle stem cell function in Duchenne muscular dystrophy	$250,000
James Ellis, The Hospital for Sick Children (Ontario) Augusto Zani (The Hospital for Sick Children), Karun Singh (University Health Network), Ji-Young Youn (The Hospital for Sick Children), Steven Kushner (Columbia University Irving Medical Center)	Extracellular vesicles transport molecular cargo from stem cell derived healthy astrocytes to rescue Rett syndrome neurons	$250,000

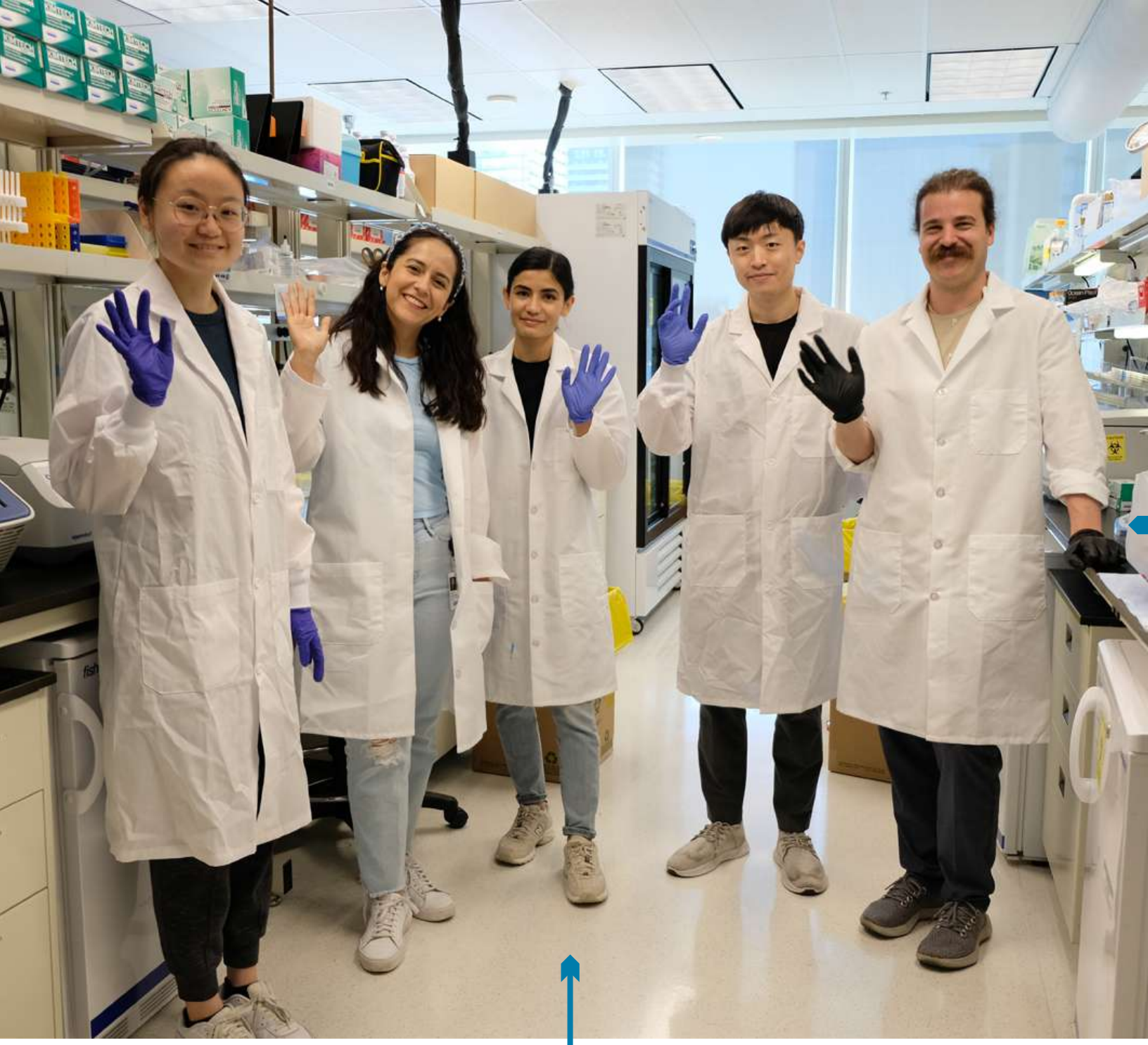
IMPACT AWARDS CONT'D

Kristin Hope, University Health Network (Ontario) Thomas Kislinger (University of Toronto), Eric Lechman (University of Pittsburgh Cancer Institute, Hillman Cancer Center, UPCI), Mark Minden (University Health Network), Eugene Yeo (University of California San Diego)	Harnessing developmentally-guided post-transcriptional HSC drivers to advance in vivo hematopoietic regeneration	$250,000
Zachary Laksman, University of British Columbia (British Columbia) Gil Bub (McGill University), Craig Simmons (University of Toronto), David Vocadlo (Simon Fraser University)	Development of high-throughput assays to stratify cardiotoxic drug risk by sex and genotype	$249,997
Arvind Mer, University of Ottawa (Ontario) Alexandre Blais (University of Ottawa), Fabien Le Grand (Institut National de la Santé et la Recherche Medicale - INSERM DR PARIS VI), Trung Nghia Vu (Karolinska Institutet)	Decoding Alternative Splicing Regulatory Networks in Myogenic Stem Cell Function	$250,000
Yale Michaels, CancerCare Manitoba (Manitoba) David Knapp (Université de Montréal), Cedric Tremblay (CancerCare Manitoba), Peter Zandstra (University of British Columbia)	Cellular engineering to enhance T cell production from pluripotent stem cells	$249,957
Shinichiro Ogawa, University Health Network (Ontario) Boyang Zhang (McMaster University)	Sustained liver engraftment with bioengineered functionally complete liver tissues	$249,233
Martin Post, The Hospital for Sick Children (Ontario) Andras Nagy (Sinai Health System, Mount Sinai Hospital), Ming Tsao (Princess Margaret Hospital)	Enhancing the production of human alveolar-like macrophages for lung cancer therapy	$250,000

IMPACT AWARDS: ELSI STREAM

Supporting the knowledge generation and/or translation of regenerative medicine research for targeted stakeholders and/or users.

Jason Guertin, Université Laval (Québec) Véronique Moulin (Université Laval), Lucie Germain (Université Laval)	Supporting the use of early economic evaluations within the regenerative medicine field	$200,000
Manoj Lalu, Ottawa Hospital Research Institute (Ontario) Jonathan Kimmelman (McGill University), Dean Fergusson (Ottawa Hospital Research Institute), Agnes Grudniewicz (University of Ottawa), Harold Atkins (Ottawa Hospital), Kevin Hay (University of British Columbia), Natasha Kekre (Ottawa Hospital Research Institute), Lauralyn McIntyre (Ottawa Hospital Research Institute), Kelley Parato (Human Health Therapeutics Research Centre, National Research Council Canada), Duncan Stewart (Ottawa Hospital Research Institute), Bernard Thébaud (Ottawa Hospital Research Institute), David Thompson (University of British Columbia)	Developing guidance to translate promising cell therapies to early phase clinical trials	$200,000



Stem Cell Network | Réseau de Cellules Souches

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