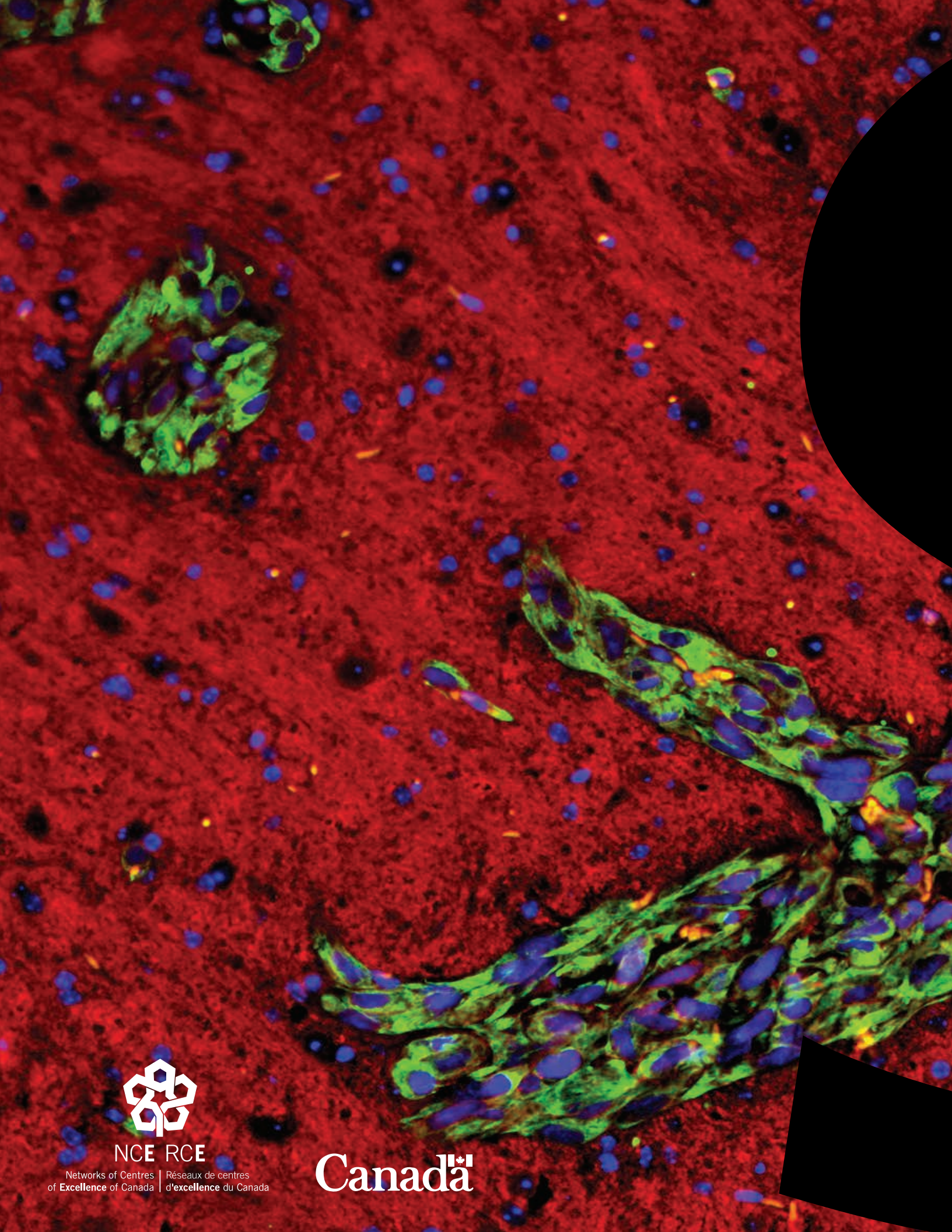
innovation

leading through

2013 STEM CELL NETWORK



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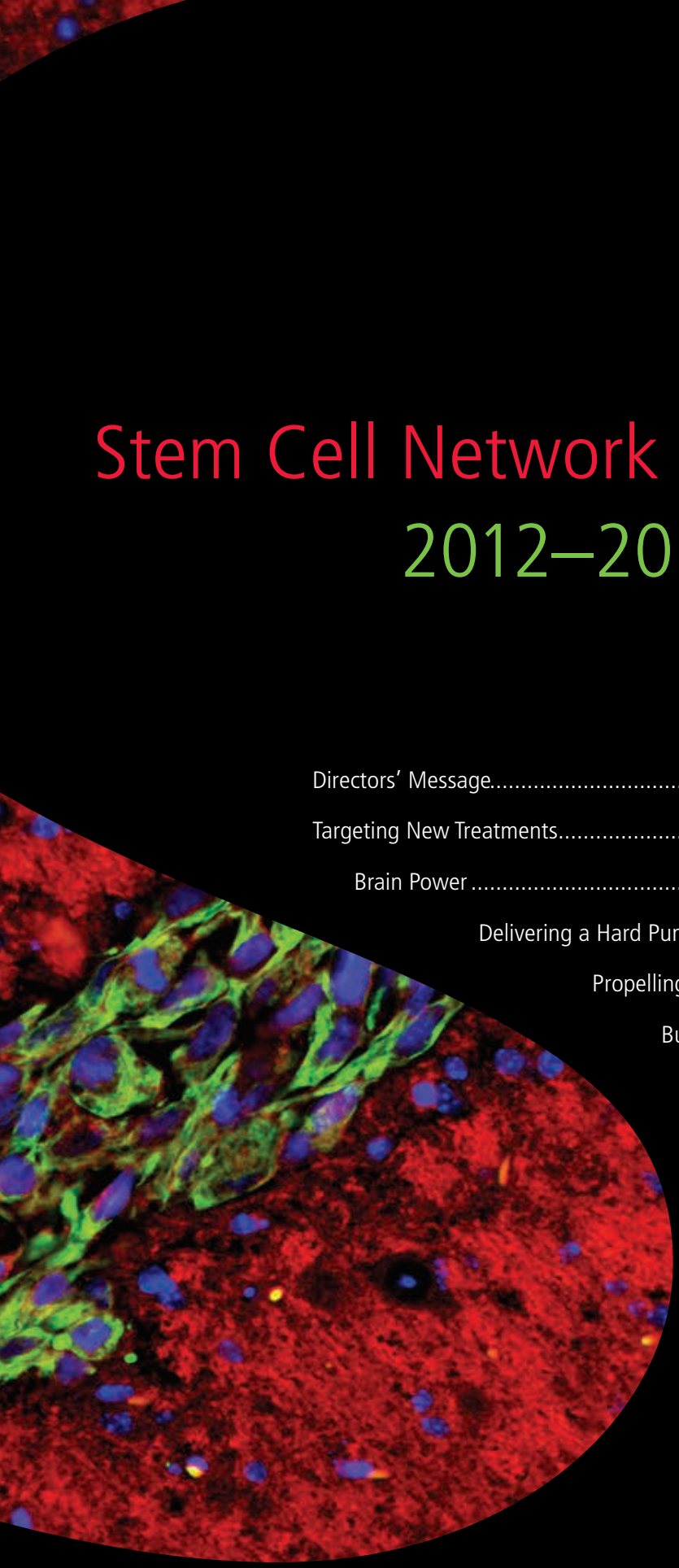
Canada

Stem Cell Network
2012–2013 Annual Report



Hot Spot Indicators
Throughout this document you will find Hot Spot nodes such as this. These icons indicate a link to online media such as video, blogs, etc. To view these properly please ensure you have a browser with an active internet connection.

Directors' Message

Drew Lyall
Executive Director

Verna Skanes
Chair of the Board of Directors

Michael Rudnicki
Scientific Director

A message from SCN's Board Chair, Scientific Director and Executive Director

After 12 years of innovative support and investment, the Stem Cell Network is very proud of the international respect held for Canada's stem cell research community. Through catalyzing grants and its incubation of a strong network of stem cell scientists, SCN has propelled Canada to become a global leader in many aspects of stem cell research—including four areas highlighted in this report: drug discovery, clinical trials, stem cell banking and ethical, legal and social issues.

A major reason for SCN's success in translating basic research to that which promises new and innovative therapies is the highly targeted and focused approach taken with the Impact and Drug Discovery grant programs. Both of these funding channels seek out highly advanced research projects, many on the verge of clinical trials, and offer transitional funding to help them take the final steps from initial identification of promising drugs or techniques towards clinical trials. Our article on page five features both Dr. Mick Bhatia and Dr. Patrick Gunning, two SCN researchers who used Drug Discovery grants to rapidly move their research forward; Bhatia is about to launch a clinical trial for his work, while Gunning has developed a product that has industrial partners lining up to commercialize. The Drug Discovery program has been highly successful for the Network and its researchers, and based on that success the Network has recently increased the funding available for these targeted projects.

"The Stem Cell Network has propelled Canada to become a global leader in many aspects of stem cell research, including drug discovery, clinical trials, stem cell banking and ethical, legal, and social issues."

These programs demonstrate the Network's commitment to the future of stem cell research in Canada, a future that will remain bright even as the Network approaches the end of its funding term. As a further indicator of the Network's success in moving stem cell research forward towards disease treatments, more than ten Network-funded projects have entered the clinical trial phase or are expected to do so within the next fiscal year—including a potentially revolutionary trial to treat degenerative brain disorders led by Dr. Freda Miller of Sick Kids Hospital, which is highlighted on page 11. Although work remains to be done before these treatments are used regularly, the stem cell field is now maturing rapidly, and the Stem Cell Network's strategic investments have ensured that Canada is and will continue to be at the forefront of this dynamic discipline.

For example, future clinical trials and treatments will require a developed and cohesive infrastructure of cell manufacturing facilities to supply researchers and medical professionals with reliable and safe stem cell products. The Network identified the need to align these interests and, as described on page 20, continues to incubate and support CellCAN, an organization designed to serve as a hub for Canadian cell therapy development. In addition, the Network's recent Cell Therapy Accelerator grant program invested in the development of current good manufacturing practice (cGMP) facilities to contain and expand necessary materials for present and future stem cell trials and therapies. There are now five affiliated cGMP stem cell manufacturing facilities in Canada, and SCN has been a major player in the initiation and growth of these facilities.

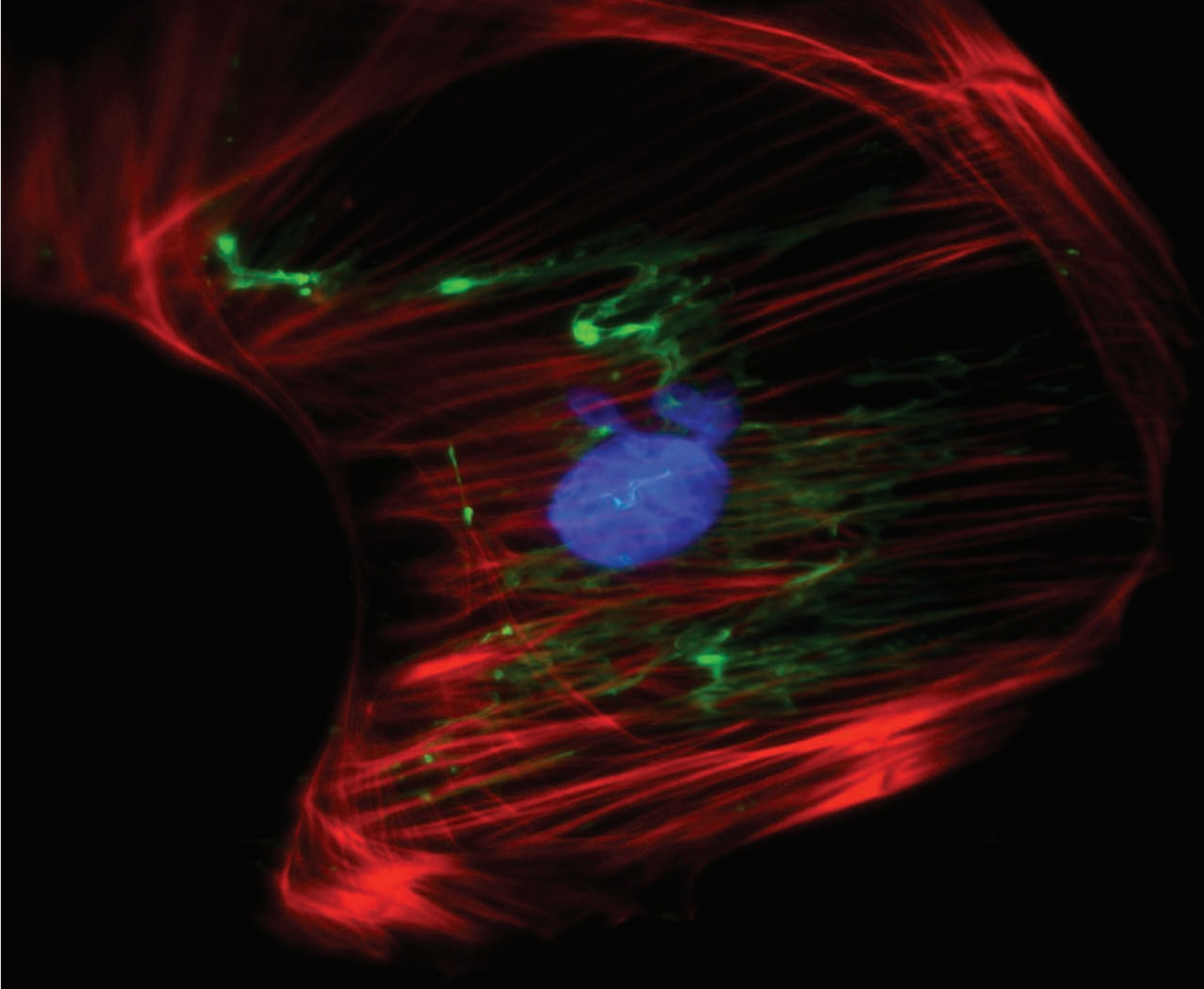
When considering the future of stem cell research, it's important to consider future stem cell researchers as well. The Network has always invested heavily in training the next generation of Canadian scientists, and 187 trainees attended at least one Network-supported workshop in the last fiscal year. The Network's innovative curriculum of science-based and soft-skills workshops, detailed on page 15, is ensuring that these future leaders have the technical knowledge necessary to conduct their research, but also the skills necessary to communicate this research effectively to funding agencies, policy makers and public audiences.

While scientific progress is offering hugely promising advances for medicine, it remains necessary that research be done in an ethically sound and responsible manner. The Stem Cell Network is the Canadian representative in the International Stem Cell Forum, and Canadian ethicists and legal scholars—with the support of the Network—are prominent leaders in the ISCF's Ethics Working Party and International Stem Cell Banking Initiative, both of which are discussed in more detail on page 26. Their work is ensuring Canada has a role in developing a principled stem cell banking system to serve as a role model for other countries, as well.

As the selected accounts presented in this Annual Report will attest, the Canadian stem cell community is maturing and developing as a world leader in the field. Work remains to be done, and the role of the Network as a facilitator and partner for research is as important as ever. But the results of the Network's funding are being seen today, entering the clinical trial process and on the way to providing novel and better treatments for devastating diseases. The pioneering legacy of Ernest McCulloch and James Till, the Canadian researchers who first identified stem cells in 1961, remains strong in Canada—and is gaining strength worldwide.

We are also very pleased to welcome the International Society of Stem Cell Research (ISSCR) back to Canada in June 2014 for the third time in eight years, led by SCN's Deputy Scientific Director, Dr. Janet Rossant. It is always a privilege to welcome the international community to Canada, and we are delighted to see this country remains at the centre of the stem cell field.

Finally, we would like to take this opportunity to offer our thanks to Drew Lyall for his tremendous contributions to the Stem Cell Network. After 12 years of leadership, it is almost impossible to quantify his impact on the Network and the Canadian stem cell community, but we do wish to note Drew's invaluable expertise that led to the prominence of the Till and McCulloch Meetings, the formation of the Cancer Stem Cell Consortium, the International Consortium of Stem Cell Networks, the Canadian Stem Cell Foundation, and CellCAN, as well as the recognition and respect the Network now enjoys in international and Canadian circles. In short, his vision and hard work have been instrumental in the success of SCN, and we all wish him the best as he leaves to pursue new opportunities with CIHR.



"The pioneering legacy of Ernest McCulloch and James Till, the Canadian researchers who first identified stem cells in 1961, remains strong in Canada – and is gaining strength worldwide."

Targeting New Treatments

Investing in a more rapid way of developing new drugs for devastating diseases

The Stem Cell Network is taking a highly targeted and focused approach to drug discovery in order to identify novel drugs and move them through the development pipeline and into clinical use more quickly.

Picking the low-hanging fruit

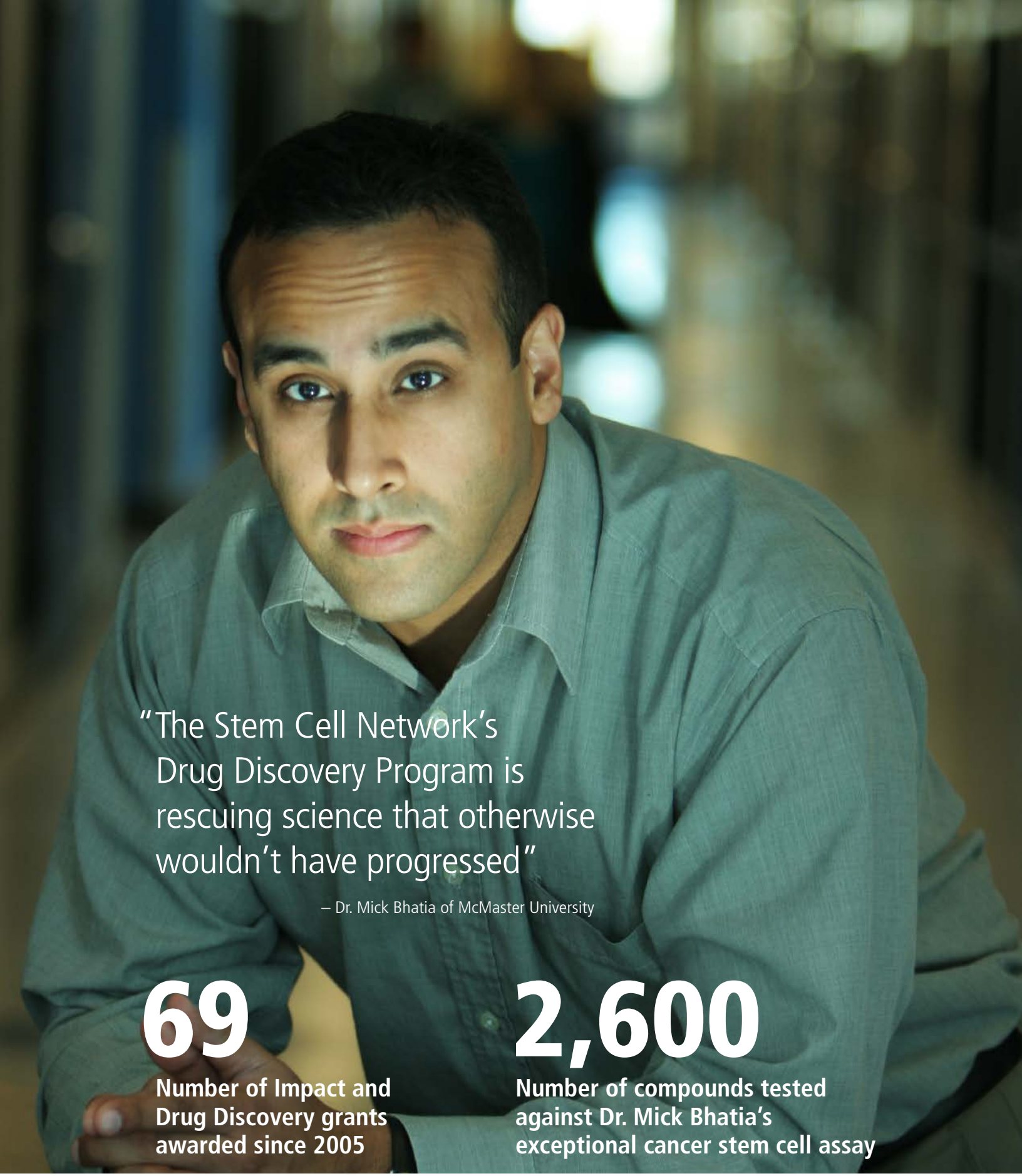
The rigorous and complex nature of scientific discovery can make it a long process, a fact that can oftentimes correlate to equally long times to move a discovery from theory into practical use. However, with the wealth of scientific knowledge today, the Stem Cell Network's Drug Discovery Program is working to help stem cell researchers build on what's known to develop novel medical treatments for many diseases.

SCN's Drug Discovery Program is a highly targeted and focused funding commitment of $2 million over five years. In that span, the Network plans to fund 20-25 distinct one-year initiatives, pursuing specific research questions to identify compounds that affect stem cell function and demonstrate potential clinical applications. Many projects funded to date have focused on FDA-approved and off-patent compounds, a conscious choice which offers speed and cost benefits for potential clinical applications.

These grants serve as a bridge between basic and clinical research, from the point where an assay—a sample against which compounds are tested—is developed to where the optimized specific drug compounds are ready for a clinical trial.

"The Stem Cell Network's Drug Discovery Program is rescuing science that otherwise wouldn't have progressed," said Dr. Mick Bhatia of McMaster University, a Stem Cell Network Principal Investigator who received a Drug Discovery grant in 2012. "It's very hard to get funding for these projects. We know a lot about these compounds, but we need to know a little bit more, and a lot of agencies want you to know a lot more before they can offer funding. The Stem Cell Network is very wisely funding a gap."

Although the individual grants are relatively small (up to $100,000 per project), SCN's strategic and targeted placement of these funds means that money goes very far in helping promising research move forward into clinical trials and, hopefully, novel medical treatments.



"The Stem Cell Network's Drug Discovery Program is rescuing science that otherwise wouldn't have progressed"

– Dr. Mick Bhatia of McMaster University

69

Number of Impact and Drug Discovery grants awarded since 2005

2,600

Number of compounds tested against Dr. Mick Bhatia's exceptional cancer stem cell assay

“A screen is only as good as its assay”

Dr. Mick Bhatia of McMaster University's Stem Cell and Cancer Research Institute is one of Canada’s most prominent stem cell researchers today. His research team was recently awarded a Drug Discovery Grant to validate the effectiveness of thioridazine, an antipsychotic drug that demonstrated potential in targeting cancer stem cells.

Before pursuing thioridazine specifically, Dr. Bhatia tested more than 2,600 chemical compounds for their effects against a human cancer stem cell assay that took more than four years to develop. Several compounds were effective at killing the cancer stem cells, but thioridazine was unique in its ability to target cancer stem cells specifically, while allowing normal stem cells to continue regular functioning.

“For each compound there’s a concentration, sort of a sweet spot, to kill cancer stem cells,” explained Dr. Bhatia. “At that same concentration, we have to assure that it doesn’t equally kill normal stem cells. So we put a further filter on the compound list, and that’s where we really started to reduce the number. Thioridazine can kill cancer stem cells and not have the same effect on normal stem cells, and a compound with that kind of property is the kind we want to move forward with. From a clinical perspective, that’s really the ideal scenario.”

With this information in hand, Dr. Bhatia is currently finalizing approvals for a clinical trial using thioridazine as part of a treatment regimen for certain patients with acute myeloid leukemia (AML). The trial is expected to launch at up to three sites, including McMaster University, before the end of 2013. Thioridazine has also shown potential for treating other cancers, including breast and colon, and clinical trials may move into testing against those ailments in the future.

Gunning for a novel cancer treatment

Even the most aggressive diseases can have weaknesses, and some of the Stem Cell Network’s researchers are identifying those weak spots to hone in on them and find ways to take advantage of them with novel treatment options. Dr. Patrick Gunning’s research with the University of Toronto – Mississauga, which has received two separate Drug Discovery Grants, is using this strategy to seek new treatment options for certain brain cancers.

In researching potential treatments for glioblastoma multiforme (or GBM, an aggressive brain cancer with poor survival rates and high resistance to currently available drug therapies), Dr. Gunning focused on finding a way to inhibit a well-known cancer-promoting protein (STAT-3). His lab work discovered a particular drug-like molecule that tracks down STAT-3 and inhibits it, which ends up killing the cancerous cells. The molecule is most effective when taken orally, and has shown so much promise that multiple industrial partners are competing to collaborate with him to commercialize the product. For his research, Dr. Gunning was named one of the University of Toronto’s 2013 Inventors of the Year.

HOT SPOT

Video

Mick Bhatia talking about how thiorizadine targets cancer stem cells without impacting healthy stem cells.

100,000

Funding available, in dollars, to each Impact and Drug Discovery grantee

20

Number of Impact and Drug Discovery grants to be funded over next two years

Dr. Gunning's strategic research focus on targeting and killing cancer-causing brain tumour stem cells demonstrates the type of work that benefits from SCN's timely and results-oriented Drug Discovery Program. And, like the work of Dr. Mick Bhatia, the chemical compound is moving towards clinical trials—yet another example of how the Drug Discovery grants are shepherding promising research into the clinic.

That's just the first half

Since the Stem Cell Network's Drug Discovery Program began in 2011, the Network has funded 12 projects researching compounds that have demonstrated potential to treat leukemia, brain cancer, osteoporosis, spinal cord injury and other diseases. SCN plans to double that number of projects by 2015, leading to a grand total of up to 25 Drug Discovery projects funded within a five-year period and a total funding envelope of $2 million.

There are three sub-categories of Drug Discovery Grants, which proceed from general identification of potential "hits", to validation of specific compounds, and then to optimization aimed at clinical or commercial use. Although SCN is still funding the first category of general grants, research teams are now beginning to advance through the development sequence and following up on original identification successes with validation and optimization projects. The trend reflects the efficacy of the Network's program design to carry these highly promising research ideas from their original genesis towards clinical trials and into medical treatments.

Even though it's still the early stages of this innovative program, SCN has already seen very exciting research conclusions from specific projects. That is only expected to increase as researchers focus in on the most promising results and push those forward through product development and commercialization.

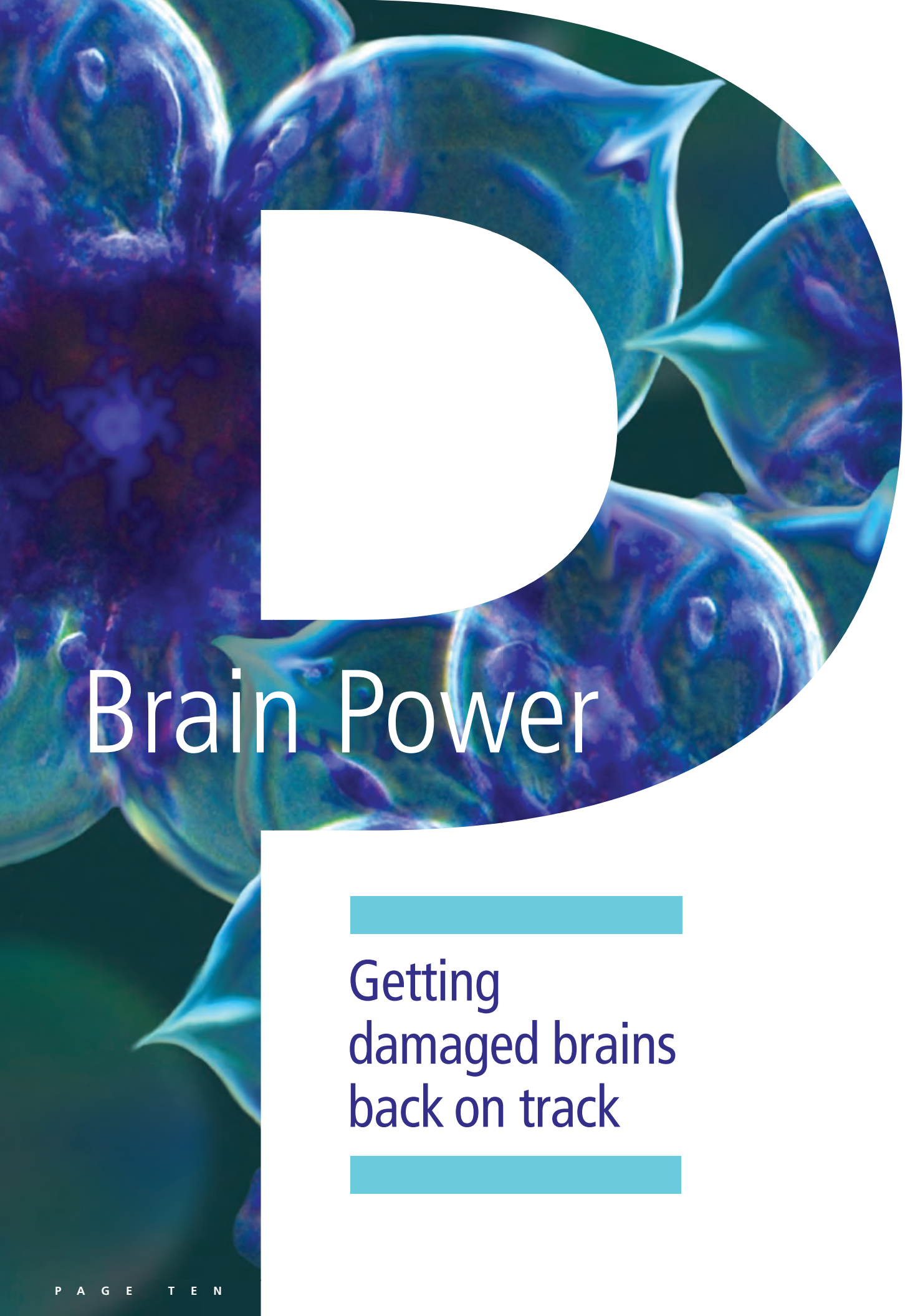
1997

The year Canadian research and SCN PI Dr. John E. Dick first identified cancer stem cells

HOT SPOT

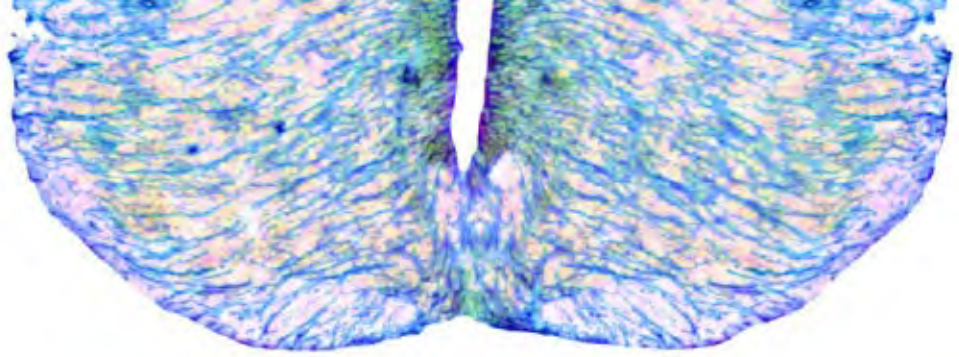
Video

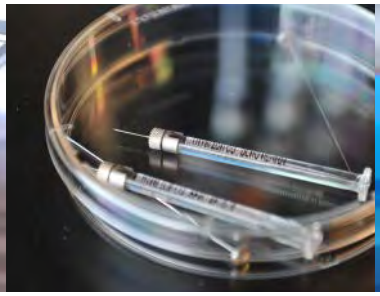
Mick Bhatia speaking about how stem cells are the key to curing cancer.



Brain Power

Getting damaged brains back on track





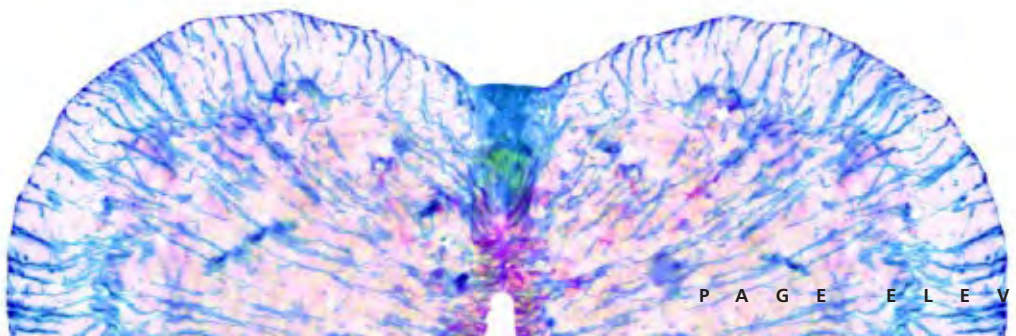
Traumatic injuries and degenerative diseases of the brain are uniquely devastating conditions that have drawn significant attention from researchers, and for good reason. Stem Cell Network Principal Investigator Dr. Freda Miller and her team have uncovered a readily available and commonly used drug that holds great promise in stimulating stem cells in the brain to improve or restore brain function, and the team is set to embark on a clinical trial this year.

Luck favours the prepared mind

Scientific discovery is no stranger to serendipity—the accidental discovery of something good or useful while not specifically searching for it—and examples of it exist throughout history, from Isaac Newton to Louis Pasteur. A more recent example occurred at The Hospital for Sick Children, where Stem Cell Network Principal Investigator Dr. Freda Miller and her team found that metformin, a drug commonly used to treat diabetes, may be able to stimulate damaged brains to repair themselves.

In 2010, Dr. Miller's research team was conducting basic research on the development of neural stem cells (the stem cells that give rise to cells necessary in brain development and function) and discovered that one particular neural pathway was vital in their differentiation. When this pathway is damaged, brain development is impaired, such as in the case of Rubinstein-Taybi syndrome, a developmental disorder that can cause a wide range of mental and physical disabilities.

This pathway is also associated with diabetes, and the antidiabetes drug called metformin is known to activate it. With this in mind, Dr. Miller's team conducted further research and found that



metformin turned on this pathway, which resulted in improved brain development and spatial memory in mice as well as *in vitro* human models. With these promising results in hand, Dr. Miller is moving forward with her colleagues Drs. Donald Mabbott and Eric Bouffet to pursue a clinical trial at The Hospital for Sick Children investigating the use of metformin in overcoming brain damage in children aged 10-17 who have acquired a brain injury as a consequence of their treatment for brain cancer.

"This is a classic example of the importance of funding basic research," said Dr. Miller of the findings, which she also described as serendipitous. "We never thought that this was going to be a therapeutically-oriented study, and yet here we are, about to embark on a clinical trial."

Kick-starting brain development

Building on her recent research findings, Dr. Freda Miller will collaborate with Drs. Donald Mabbott and Eric Bouffet in leading a pending clinical trial to help repair the brains of adolescents that have been damaged in cancer treatment. The trial is to take place at The Hospital for Sick Children in Toronto.

When people are suffering from brain cancers, one conventional treatment is whole-brain radiation, which, unfortunately, has a side effect of severely impairing brain development, especially in children. At The Hospital for Sick Children, there are a number of young people who've undergone this treatment, but are left with cognitive problems that, without intervention, will persist for the rest of their lives.

"The good news is that these kids survived, whereas without the treatment, they wouldn't have," said Dr. Miller.

In order to offset the brain trauma, Dr. Miller is working with Dr. Donald Mabbott, a developmental psychologist at The Hospital for Sick Children, to conduct a clinical trial using metformin to undo the damage to the developing brains of these children.

"Metformin is kind of like a 'kick,' to make neural stem cells differentiate into their progeny," described Dr. Miller. "This clinical trial will attempt to use metformin in these young 10-17-year-old adolescents to ask if we can promote recovery, cognitively or structurally."

120

Number of different types of primary brain tumours

320 km/h

Speed at which signals are sent between nerve cells

18

Approximate age at which the brain stops growing under normal circumstances

HOT SPOT

Video

Video synopsis of Dr. Miller's research and findings.


"This is a classic example of the importance of funding basic research. We never thought that this was going to be a therapeutically-oriented study, and yet here we are, about to embark on a clinical trial." – Dr. Freda Miller

On the fast track

Clinical trials are often criticized for the length of time and amount of funding required to go from an initial discovery to actual clinical use. Although that due diligence is justified in order to protect public health, there is a safe shortcut researchers can pursue for drug-based trials: Examining the previously unknown effects of already-approved drugs. Dr. Freda Miller's work with metformin, a commonly used anti-diabetic drug, is a prime example.

"The advantage to a drug like metformin is that it's already been used chronically in our target group, so we know that it's basically safe," Dr. Miller said. "Of course, we're going to check that when we do our pilot trial, but nonetheless it makes a huge difference."

With the majority of funding in place, the group expects to start their clinical trial before the end of 2013. While this first trial is investigating the effects of metformin on restoring brain function in a very specific subset of people (namely, adolescents between 10-17 who have suffered neural development problems due to whole-brain radiation), there is realistic potential for the treatment of numerous other degenerative diseases of the brain. This could include other traumatic brain injuries, stroke, Alzheimer's disease, and multiple sclerosis. There is much work remaining to do before these treatments are widely available, but the potential is certainly there—and is very promising.

[Metformin]

is a very safe drug that's already used chronically in people from five years old to 105, and it might be helpful for treating various kinds of injury or even neurodegeneration. – Dr. Freda Miller

100,000,000,000

Approximate number of nerve cells encased in the brain

Delivering a hard **punch** with soft skills

The Stem Cell Network is giving its young scientists a competitive edge with an innovative suite of programs aimed at honing important soft skills.

70

Trainees at SCN's Communications for Scientists workshop on March 20, 2013

129

SCN trainees received stipend support from SCN in 2012

HOT SPOT

Blog Post

Why the pen is sometimes mightier than the pipette.

HOT SPOT

Blog Post

Social media and stem cells time to start tweeting.

Training the next generation of scientists doesn't start and end in the lab. With tighter competition for academic grants and a corresponding trend for highly qualified personnel to seek work outside academia, it's increasingly important that they acquire skills—such as communications, writing and commercialization—that will make them marketable in a knowledge economy. The Stem Cell Network has developed several programs and workshops to help its trainees gain those vital skills.

Pitching to dragons

Approaching industry partners to request research funding is no easy task. Often the biggest challenge lies in communicating the research and its potential in a way that resonates with the intended audience. To help its HQP acquire this fundamental skill, the Stem Cell Network's Trainee Communications Committee organized a unique and challenging commercialization workshop of… *dragonesque* proportions.

More than 70 stem cell trainees attended the March 20, 2013 workshop, which was modeled after the popular *Dragon's Den* television series. The Dragon panel consisted of Kevin Canning from GlaxoSmithKline, a self-described scout for academic-industrial collaborations; Jamie Stiff, a partner at biotech venture capital firm Genesys Capital; and Terry Thomas, a Senior Vice-President at STEMCELL Technologies. The Dragons were asked to judge the pitches from 12 trainee teams and were given a fictional $500,000 investment to award to the best pitch. For their part, the trainees had each been tasked with homework reading and had to work within pre-assigned groups to identify their pitch prior to the workshop.

As the HQP discovered, the biggest challenge was in realizing that what's interesting from an academic perspective might not be so from a commercial point of view. The perspectives can be different, so the approach must be different, too.

"The experience was a challenging one, with the biggest obstacle facing teams was learning how to set aside academically interesting ideas that wouldn't help commercialize their technology," wrote Paul Krzyzanowski, who participated in

187

SCN trainees attended an SCN event in 2012

the challenge, in a post on *Signals Blog* following the workshop.

By the end of the day, participants had learned the importance of truly understanding their target audience and tailoring their messaging to make it relevant and interesting—a lesson especially important when pitching to a potential partner with $500,000 (whether real or imaginary) in its back pocket.

"No one cares about your stupid science."

This was one of the statements made by guest presenter, John Rennie during SCN's Communicating to Public Audiences: Storytelling is not Telling Stories session held on March 20 in Toronto. The session was part of a full day "Communications for Scientists" workshop, aimed at developing vital soft skills and expanding career options for young scientists. Rennie, former editor-in-chief of *Scientific American*, used the statement to illustrate the challenge faced by scientists in communicating to the media and general public. Overcoming that challenge involves three key steps; 1) identifying the audience, 2) identifying a problem the audience cares about, and 3) describing, in very broad terms, how research helps solve that problem.

The presenters showed how to target specific audiences—from patient groups to general public to those who may not be scientists but nevertheless have a keen interest and knowledge about scientific issues. Each should be considered when writing messages for public consumption. This message resonated with the roughly 70 highly-qualified personnel in the room.

"It's a refreshing reminder to any researcher who wants to have a wide impact," wrote Paul Krzyzanowski in a blog post following the event. "When writing manuscripts, too often it seems that there are only four people in the audience: an editor and three referees."

The workshop, which was organized by SCN's Trainee Communications Committee, also provided insights into audience demographics, how to begin crafting messages for public consumption right from the grant application stage, and how to use social media not just to communicate research, but to learn about and connect with other researchers as well. The half-day session was a follow-up to a complementary workshop held a year earlier that focused on the basics of writing in lay language to journalists and via social media.

"Our goal has been to create professional development programs that respond to these needs and deliver high quality training that has direct relevance to stem cell/regenerative medicine."

– Dr. Eva Szabo, outgoing chair of the SCN TCC

"These training opportunities will enable the HQP to succeed in career paths within regenerative medicine/stem cells spanning both academia and industry." – Dr. Eva Szabo, outgoing chair of the SCN TCC

Academics of success

While there are a myriad of career options available to highly-qualified personnel (HQP) in stem cell and regenerative medicine research, including those in industry, government or NGOs, the academic career remains one of the most coveted. For many young researchers, a position and lab in a respected university is the pinnacle of career success. But these positions are rare, so competitions naturally favour those who have the most impressive credentials.

"If you're an early career scientist, much of your success is dependent on obtaining research grants, writing good journal articles and communicating your research to the scientific community as well as the public, and yet quite often you are not taught how to do these things," said Dr. Eva Szabo, Assistant Professor at McMaster University and Chair of the SCN Trainee Communications Committee (TCC) from 2011 to 2013.

This prompted the SCN TCC to develop specialized workshops aimed at addressing these important skills. The first was a full-day Grant Review Workshop in which trainees became part of a mock review panel tasked with assessing and grading recent grant applications that were generously provided by a number of (brave) SCN investigators. The participants learned what elements constitute a successful grant application and how organize and focus their writing so they can better meet review requirements and increase their odds of receiving research grants.

The second workshop tackled journal-writing skills with a specific emphasis on how to produce strong journal articles, how scientific journals work and what editors are looking for when they make decisions to accept or reject submissions. The session included presentations from journal editors and SCN investigators, who shared their experiences and provided concrete tips and examples on how to write strong titles, abstracts and cover letters.

"Even though I helped create many of these workshops, I also found immense value in the skills that I gained, which helped me to obtain an academic placement at McMaster University and to forge collaborations within academia and industry," Szabo said.

Both workshops were launched at the 2012 Till & McCulloch Meeting as pre-conference events for groups of about 40 registered HQP. Due to their success, the two workshops are being offered a second time at the 2013 Meetings to take place October 23-25 in Banff, Alberta.

HOT SPOT

Blog Post

The tooth tattoo a novel biosensor for disease detection.

552

SCN trainees and HQP who have found employment upon leaving the Network from 2001 to 2012

HOT SPOT

Blog Post

3D patterning of blood vessels creating a fertile landscape for engineered tissues.

Training by trainees

Logic would suggest that the people best able to identify professional development needs of early career researchers are the early career researchers themselves. That's why the Trainee Communications Committee (TCC) plays such an important role in assisting the Network in the "development, implementation and communication of training opportunities for SCN trainees."

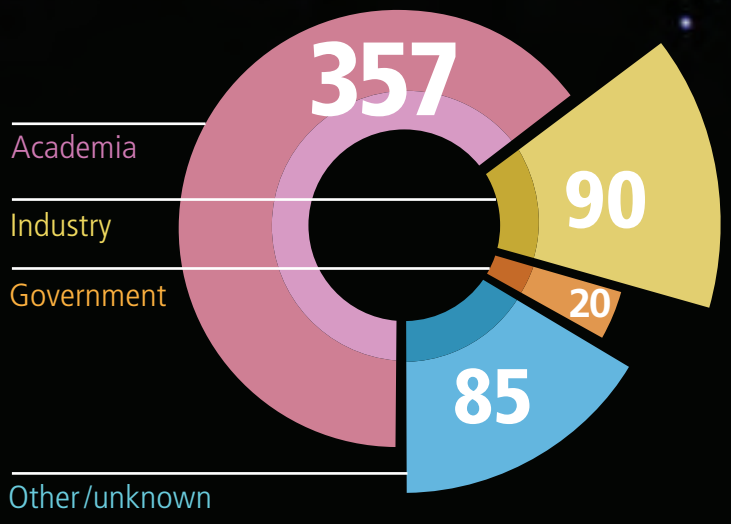
Members of the TCC are selected among applicants from across Canada to ensure representation in all Network research disciplines, including basic, clinical and translational research, engineering and ethical, legal and social issues. Comprised of 10-15 members, the TCC is responsible for the development and organization of the majority of the Network's professional development portfolio, including the soft skills workshops, networking events and mentorship programs, most of which take place at the annual Till & McCulloch Meetings.

"Because the TCC is comprised of trainees at different stages of their careers and with different research backgrounds, we have been able to identify a wide range of needs and areas of skill development," said Dr. Eva Szabo, Assistant Professor at McMaster University and Chair of the Trainee Communications Committee (2011-2013). "Quite often this type of skills training is either not offered as part of a typical academic program, or does not adequately address the stem cell/regenerative medicine community."

"Our goal has been to create professional development programs that respond to these needs and deliver high quality training that has direct relevance to stem cell/regenerative medicine HQP," said Szabo. "These training opportunities will enable the HQP to succeed in career paths within regenerative medicine/stem cells spanning both academia and industry."

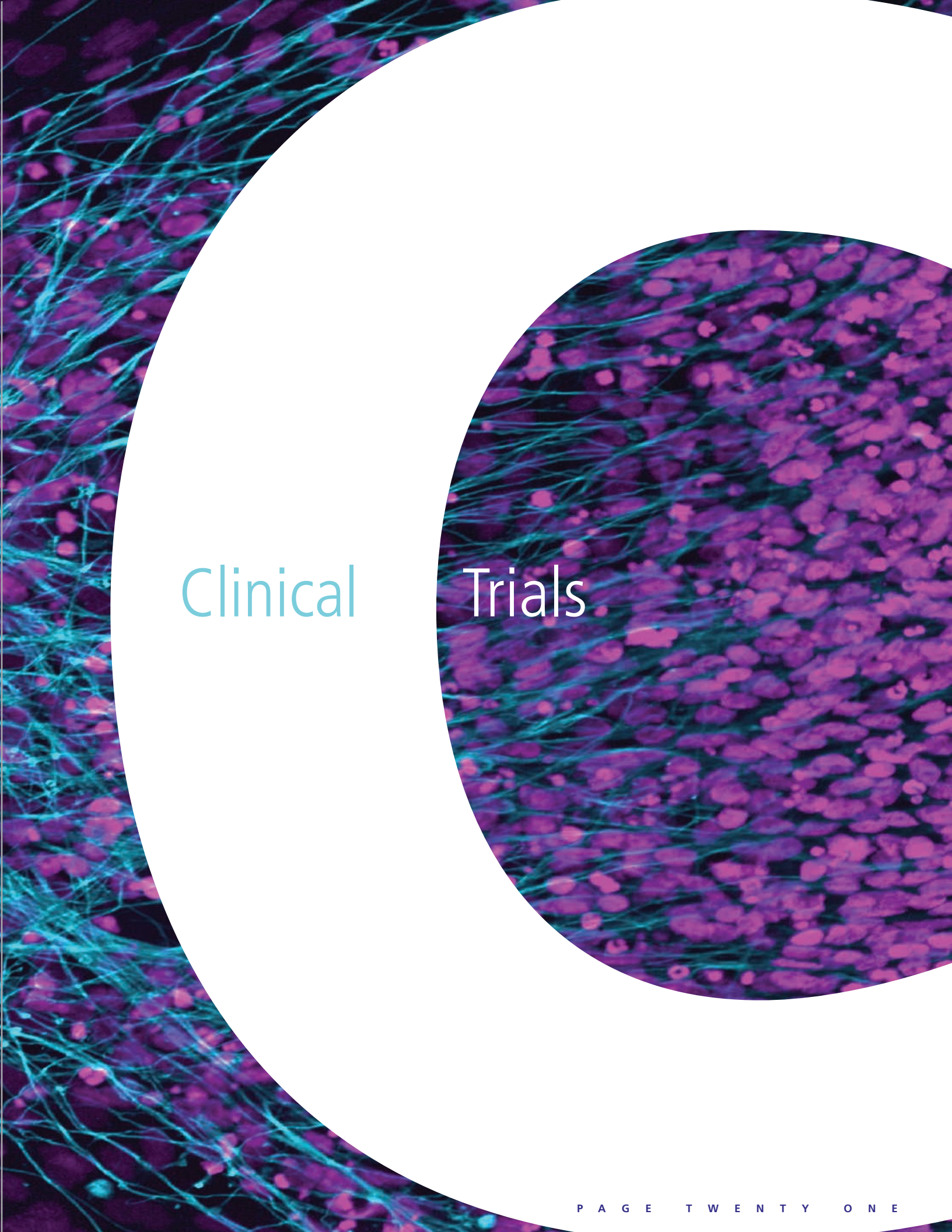
Where do they go?

Career paths of SCN Trainees after leaving the Network, 2001-2012:



Propelling

Building a national cell manufacturing infrastructure to advance Canadian stem cell research



Clinical Trials

55

Number of stem cell-based Phase I/II clinical trials projected to begin by 2015 in Canadian stem cell centres

323,000

Number of patients who have been treated with cell-based therapies since 1988

HOT SPOT

Video

Dr. Donna Johnston discusses Canada's need for a National Public Cord Blood Bank

HOT SPOT

Video

Allogeneic and autologous cord blood units.

The Stem Cell Network is investing in the development of a cooperative, national network of cell manufacturing facilities to provide the materials necessary for stem cell-based clinical trials and therapeutic procedures.

An off-the-shelf solution

Sepsis is a devastating medical condition in which the body's immune system over-responds to a bacterial infection. Millions of people are diagnosed with sepsis or septic shock each year, and roughly one in four people succumb to the disease. It presents a massive challenge for health care given that there is no specific therapy that works—patients are usually given antibiotics, but results vary widely.

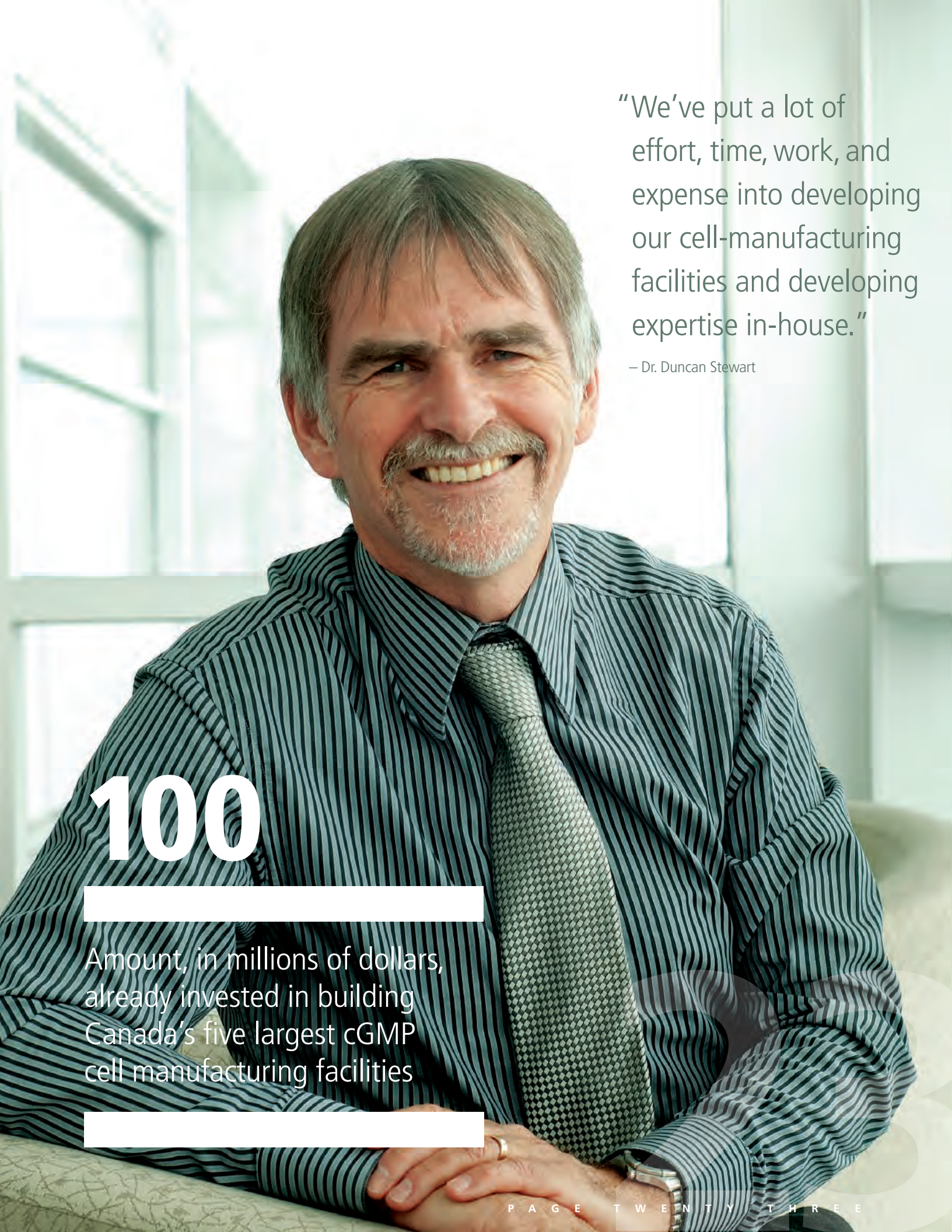
Responding to this huge challenge, Stem Cell Network PI Dr. Duncan Stewart and his research team are embarking on a clinical trial at the Ottawa Hospital Research Institute (OHRI) to test a mesenchymal stem cell (MSC)-based treatment for septic shock. At the OHRI's cell-manufacturing facility, Dr. Stewart's team collected bone marrow samples from healthy donors, and then expanded those cells in order to make a cell-based product that—importantly—is readily available as a viable treatment for septic shock.

"For this trial, we've used what are called allogeneic cells, which are cells from other individuals rather than the patient's own cells," explained Dr. Stewart. "This makes treatment easier since we'll have off-the-shelf products ready to go, which is what you need in order to be able to intervene within a few hours. We don't have the luxury of taking several weeks to develop a product."

The team focused in on an MSC-based treatment after years of pre-clinical research that identified MSCs as able to execute a coordinated suppression of the immune system without interfering with its ability to clear the initial bacterial infection. They're also capable of flying "under the radar" of the immune system, meaning that they aren't rejected as foreign and therefore avoid potential problems with graft-versus-host disease (GVHD).

In order to enable this clinical trial, Dr. Stewart took advantage of SCN's Cell Therapy Accelerator Grant program, which sought to propel pending trials into the clinic.

"The Stem Cell Network's Cell Therapy Accelerator Grant enabled us to initiate the cell manufacturing processes," said Dr. Stewart. "Health Canada needs to know every component and every step in your manufacturing process before they'll approve pending trials. You have to have everything worked out and validated beforehand, and that's what the SCN grant allowed us to do."



"We've put a lot of effort, time, work, and expense into developing our cell-manufacturing facilities and developing expertise in-house."

– Dr. Duncan Stewart

100

Amount, in millions of dollars, already invested in building Canada's five largest cGMP cell manufacturing facilities

MSCs have also shown potential in treating diseases other than septic shock, including the aforementioned GVHD as well as heart failure, heart attack, irritable bowel syndrome and even multiple sclerosis. The development of a consistent and quality-controlled MSC product for septic shock has laid the groundwork for potential further clinical trials and therapeutic treatments for these diseases.

"We've put a lot of effort, time, work, and expense into developing our cell-manufacturing facilities and developing expertise in-house," said Dr. Stewart. "We certainly have the ability to manufacture this product, and we can do it quite efficiently from a cost perspective, as well."

Knowledge-sharing and collaboration

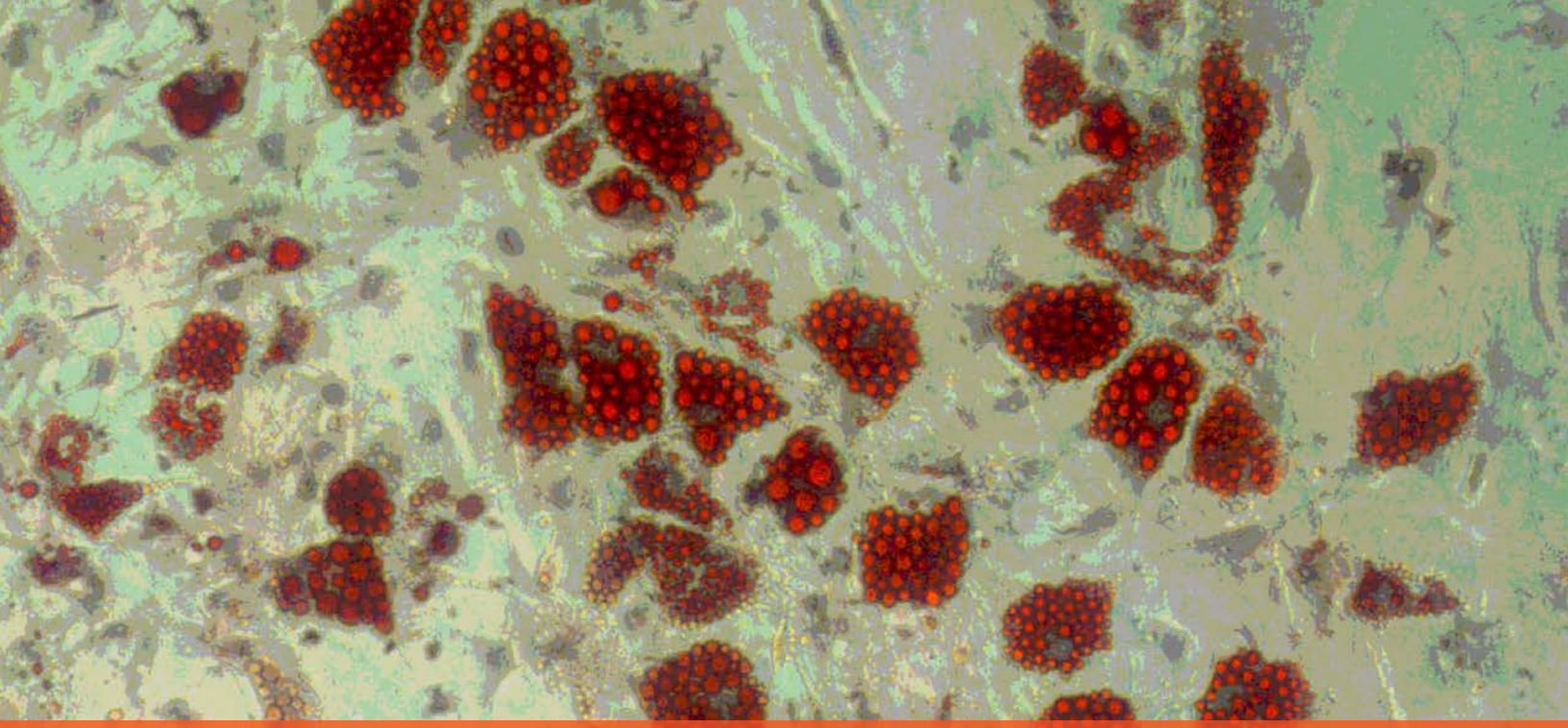
There are presently five current good manufacturing practice (cGMP) cell manufacturing facilities across Canada, in Québec, Montréal, Ottawa, Toronto and Edmonton. These facilities represent the engines that will power present and future cell-based clinical trials in Canada. Through its Cell Therapy Accelerator Program, SCN has provided funds for the development, standardization and sharing of best practices between these facilities. Although it rarely garners headlines, the end result of this kind of collaboration and knowledge sharing is a mutually beneficial increase in efficiency that allows greater resources to be devoted to the important work of research and clinical trials.

CellCAN: A hub for Canadian cell therapy development

Given its rich history in the field, Canada is uniquely placed to be one of the earliest beneficiaries of stem cell research. As of fall 2013, more than 50 early-phase clinical trials deploying transplanted cells were expected to commence within four years in Canada, pending the alignment of the required physical, operational and regulatory infrastructure necessary to support them.

1,000,000

Typical cost for a 10-12 patient Phase I clinical trial



Much has already been accomplished towards this goal. In recent years, $80 million of federal, provincial and philanthropic funds have been invested in building new cGMP cell manufacturing facilities across the country. More recently, there has been complementary funding through the Centre for the Commercialization of Regenerative Medicine to catalyze the development of new technologies that will support the cell manufacturing process, as well as novel biomaterials and complex tissues that could be integrated into cell-based products.

However, while Canada appears to be well positioned, there remain profound challenges inhibiting the effective and timely migration of these innovative treatment concepts into standard clinical practice, including significant fixed operating costs, a shortage of qualified technical personnel, and the regulatory uncertainty typical of any new field of medicine.

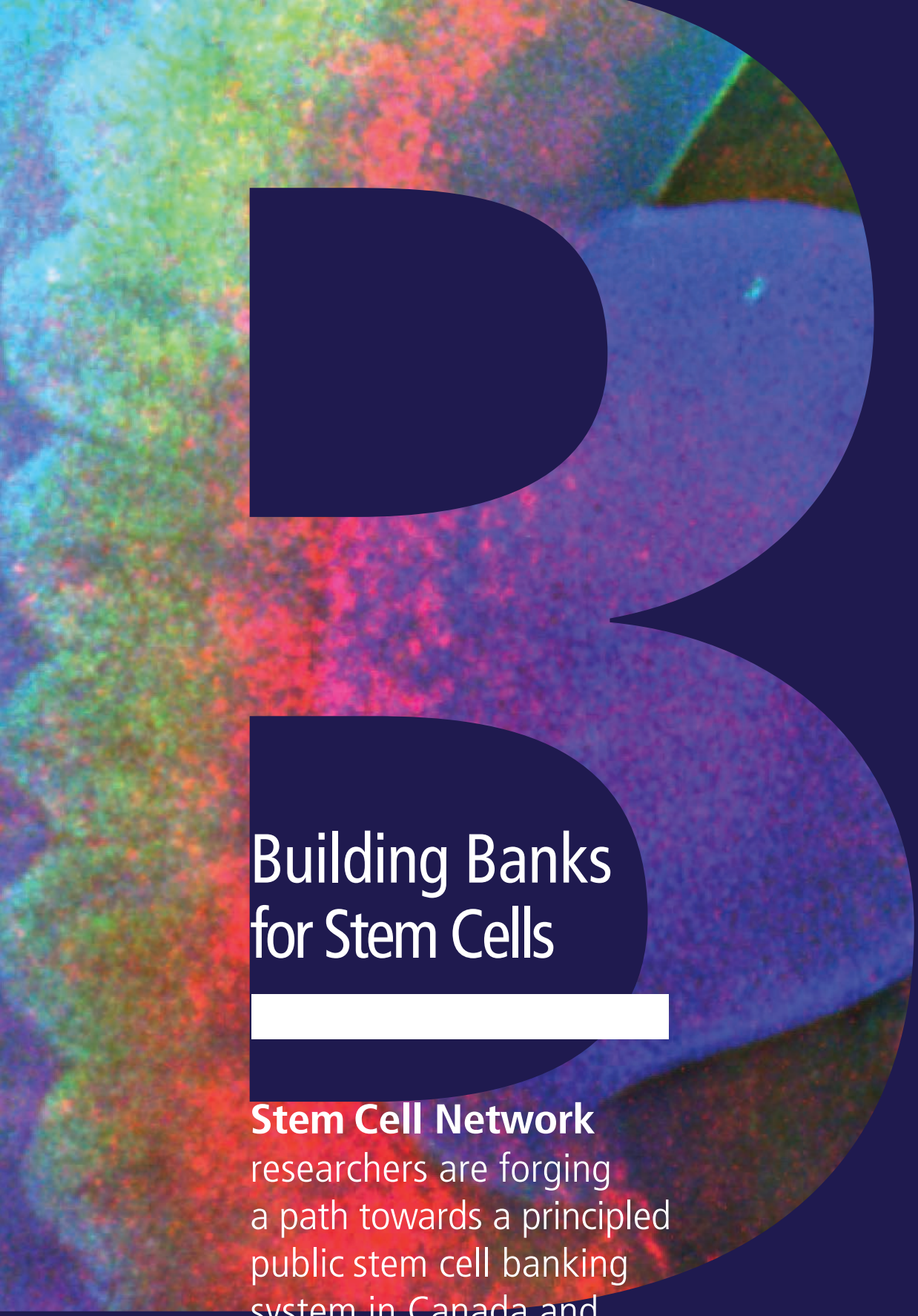
Through a series of workshops funded by SCN, stakeholders from all sectors came to recognize that goodwill and collaboration between researchers, regulators, funders and industry can readily address these impediments and will assure accelerated trials. The end result is the proposed establishment of CellCAN, a new not-for-profit corporation that would act as a catalyst for the continued development of cellular therapies.

CellCAN would offer three distinct and necessary services for researchers to conduct clinical trials: First, co-funding for Phase I/II clinical trials, following peer review by a panel of international experts; second, a national network to streamline access to and use of approved cell handling and manufacturing facilities across Canada; and third, flexible and nimble programs and activities to manage bottlenecks in the clinical translation process, and promote the continued sharing of best practice.

SCN is continuing to foster and incubate CellCAN while seeking funding commitments, based on strong support for the concept from industry, the host institutions of cell processing facilities, national health charities, and Health Canada. If successful, this highly integral piece of the cell therapy puzzle will go a long way to ensuring the future of Canada's stem cell community eclipses its illustrious past.

5,000,000,000

Expected dollar value of annual worldwide sales for cell-based products by 2015



Building Banks for Stem Cells

Stem Cell Network researchers are forging a path towards a principled public stem cell banking system in Canada and around the world

"In Canada, a national cord blood bank is particularly important because we truly value our health care system as an equitable, accessible, usable, and universal approach to health care. Collecting something from the public for the public is in harmony with the Canadian mindset."

Dr. Bartha Knoppers, McGill University Centre of Genomics and Policy

What is a stem cell bank?

A stem cell bank is a systematically organized and searchable collection of stem cells. It's a term often used to describe the physical collections of stem cell lines, but it's also used to describe registries containing information about stem cell lines stored in other facilities. These banks supply high-quality cells to researchers conducting their work, and higher-quality clinical-grade lines intended for therapeutic use.

The most commonly stored stem cells today are derived from umbilical cord blood—drawn from a newborn's umbilical cord, formerly considered medical waste, which is a rich source of blood stem cells. Stem cell banks also house embryonic stem cells, induced pluripotent stem cells, and adult stem cells (such as neural [brain] stem cells and epidermal [skin] stem cells), and those cell lines will become more commonly stored as expansion techniques continue to improve.

By centralizing stem cell lines in banks, their quality and reliability can be guaranteed. In the contemporary globalized health care landscape, however, stem cell banks stand to benefit greatly from international coordination efforts to ensure optimized best practices for storage and manipulation as well as common ethical and regulatory principles. That's where McGill researchers and SCN members Dr. Bartha Knoppers and Ms. Rosario Isasi take the lead.

20,000

Approximate number of cord blood transplants performed worldwide to date

HOT SPOT

Video

SCN PI Dr. Ian Rogers (Samuel Lunenfeld Research Institute) discusses what types of stem cells can be banked.

Canadian leadership

At the McGill University Centre of Genomics and Policy, Dr. Bartha Knoppers and Ms. Rosario Isasi, head the International Stem Cell Forum's Ethics Working Party (ISCF-EWP). The group, which Knoppers chairs, is composed of stem cell research funding agencies from around the world and was launched to develop strategies "to foster the scientific and ethical integrity of research in a global context." Their work, supported by the Stem Cell Network, has laid the foundation for international collaboration in stem cell research and stem cell banking. In 2012, Knoppers received a Public Policy Grant from the Stem Cell Network to develop policy recommendations based on the ISCF-EWP's engagement with national bioethics committees.

Over the course of nearly two decades, Knoppers has been studying the ethical, legal and social issues surrounding biobanking in Canada and around the world. Since 2009, she and Isasi have focused in on stem cell banks. Knoppers' latest SCN-funded project, "From Banking to International Governance: Fostering Innovation in Stem Cell Research," is investigating the ethical, legal, social and commercialization issues surrounding stem cell banks in order to devise international regulatory frameworks to optimize the development of stem cell treatments.

Both Knoppers and Isasi have worked with the United Nations in establishing international standards on bioethical issues. Knoppers was a member of the International Bioethics Committee of the UNESCO while Isasi was very active in the development of the UN's 2005 Declaration on Human Cloning. They're both frequently invited to speak at international stem cell conferences, which is a reflection of their international standing as global leaders.

Through their work, Knoppers and Isasi are pushing the international stem cell regulatory landscape forward, but they're also actively engaging stakeholders in Canada to ensure that this country leads by example, as well. Working with colleagues as well as with policymakers, Knoppers and Isasi have developed policy statements, including the aforementioned "From Banking to International Governance" project, that have offered analysis, strategies and solutions for moving towards translational stem cell research within Canada and on the global stage.

Building Canadian capacity

In order to take advantage of the therapeutic and research potential of cord blood, Canadian Blood Services (CBS) is implementing a National Public Cord Blood Bank based in part on policy recommendations from the Stem Cell Network that built on the research of Dr. Bartha Knoppers and many other SCN principal investigators. The CBS national public bank began collecting donations at select Ottawa hospitals in September 2013, and will expand to the Greater Toronto Area, Edmonton and Vancouver in 2014.

Stem cells are poised to greatly expand treatment in the Canadian health care system, and cord blood represents a simple and readily available source for them. Although there are still some challenges in stem cell banking, especially in terms of expanding stem cells prior to implantation, establishing a public bank gives Canada the infrastructure necessary to keep up with new and improved medical procedures for its citizens. Offering a public banking option, in contrast to the private banks already available, aligns well with the Canadian health care system.

"In Canada, a national cord blood bank is particularly important because we truly value our health care system as an equitable, accessible, portable and universal approach to health care," said Knoppers about the National

Ms. Rosario Isasi, McGill University Centre of Genomics and Policy

6

Number of years before the Canadian National Cord Blood Bank reaches its target inventory of 20,000 cord blood units stored

Public Cord Blood Bank. “Collecting something from the public for the public is in harmony with the Canadian mindset.”

Synergy among international stem cell banks is especially important to Canadians given the multicultural nature of our population. Blood types are largely determined by the ethnic backgrounds of patients, and finding stem cells that will be accepted remains a major hurdle for treatment. By working to align the policies of international stem cell banks, Knoppers and Isasi are ensuring that participating countries can take advantage of quantities of stem cell types to ensure a match can be found for the vast majority of patients.

This National Public Cord Blood Bank sets the stage for potential future growth into banking other types of stem cells, as well. The Stem Cell Network is working with leading Canadian researchers to prepare standards and interoperable protocols that will encourage the development of a public stem cell bank to maintain not only cord blood units, but also other cellular products for therapeutic uses. It’s a future that’s becoming more apparent by the day.

Canada rolls out the welcome mat

This autumn, the ISCF and the ISCF-EWP will be coming to Canada. Their meetings are hosted by the Stem Cell Network and organized by Ms. Rosario Isasi and Dr. Bartha Knoppers in order to demonstrate Canada’s commitment to international leadership in the sphere of stem cell banking.

ISCF’s Canadian meetings will take place alongside the 2013 Till & McCulloch Meetings in Banff, Alberta, and will offer ISCF members from 18 countries the opportunity to meet many of Canada’s stem cell researchers as a result. Since medical research has become an international venture, it’s more important than ever to encourage international collaboration and policy harmonization through organizations such as ISCF. That fact is a driving force behind the work of Knoppers and Isasi, and it’s also why SCN stepped up to host the upcoming meetings.

By bringing the ISCF to Banff, SCN will not only encourage increased collaboration among the international stem cell networks, but will also expose them to the best Canadian research during the course of the Till & McCulloch Meetings.

1978

Transplantable stem cells are first discovered in human cord blood

80

Number of diseases that have been treated with cord blood

HOT SPOT

Video

SCN PI Dr. Ian Rogers (Samuel Lunenfeld Research Institute) discusses the costs of banking cord blood.

HOT SPOT

Blog Post

How many facilities? Centralized vs. decentralized manufacturing strategies for cell therapy

"It's incredible to remember that until about ten years ago, cord blood was generally considered medical waste. The understanding that the placenta and cord blood can actually contain stem cells with therapeutic potential is quite recent, and could be of significant benefit for health care."

Dr. Bartha Knoppers,
McGill University
Centre of Genomics and Policy

48

Millions of dollars required for the National Cord Blood Bank's launch and initial operation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York University
Anthony Scime

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Dalhousie University
McGill University
McMaster University
Memorial University of Newfoundland
Queen's University
Simon Fraser University
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Université Laval
University of Alberta
University of British Columbia
University of Calgary
University of Lethbridge
University of Manitoba
University of Ottawa
University of Saskatchewan
University of Toronto
University of Waterloo
University of Western Ontario

Australia
Swinburn University

Finland
University of Helsinki

France
University of Poitiers

Germany (2)
Max-Delbrrueck Centre for Molecular Medicine
University of Bonn

Sweden (2)
Linkoping University
Lund University

Taiwan
National Chengchi University

United Kingdom (8)
Durham University
Imperial College London
University College, London
University of Cambridge
University of Edinburgh
University of Leicester
University of Oxford
University of Sheffield

United States (23)
American University
Baylor College of Medicine
Case Western Reserve University
Colorado State University
Emory University
Georgia Institute of Technology
Georgetown University
Harvard University
Indiana University
Massachusetts Institute of Technology
Northwestern University
Stanford University
University of California
University of Kansas
University of Maryland
University of Massachusetts
University of Minnesota
University of North Carolina
University of Pennsylvania
University of Pittsburgh
University of Southern California
University of Texas
University of Wisconsin

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Federal (6)
Canada Foundation for Innovation
Canadian Institutes of Health Research Department of Foreign Affairs & Intl. Trade
Genome Canada
Health Canada
Intra-Agency Secretariat on Research Ethics

Provincial (5)
Alberta Innovates
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Michael Smith Foundation for Medical Research (British Columbia)
Ontario Ministry of Research & Innovation
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Amorchem
Astellas
BD BioSciences
Beckman Coulter
BioE
BioSpherix
Cellular Dynamics International
Cormex Research
Deloitte Touche
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Illumina
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Northern Therapeutics Inc.
Octane Inc
Organogenesis
Pfizer Canada
Reveille
Roche Diagnostics
StemCell Technologies
Stem Cell Therapeutics
TAP Biosystems
Therapure BioPharma
Tissue Regeneration Therapeutics

Health Institutes, NGOs and Others (85)

Alberta Cell Therapy Alliance
Art Gallery of Alberta
BC Cancer Agency Foundation
BrainCanada
British Columbia Cancer Agency
Brown Foundation Institute of Molecular Medicine
California Institute of Regenerative Medicine
Calgary FireFighters Burn Treatment Society
Canadian Association of Research Ethics Boards
Canadian Blood Services
Canadian Breast Cancer Foundation
Canadian Stem Cell Foundation
Cancer Stem Cell Consortium
Centre for Commercialization of Regenerative Medicine
Centre for Drug Research & Development
Chelsea Art Museum
College of Physicians and Surgeons of Alberta

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Oregon Biomedical Research Institute
Organization for Economic Cooperation and Development
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Sam's Day Fund
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St. Michael's Hospital
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TheCell Research Network
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The James Birrel Fund for Neuroblastoma Research
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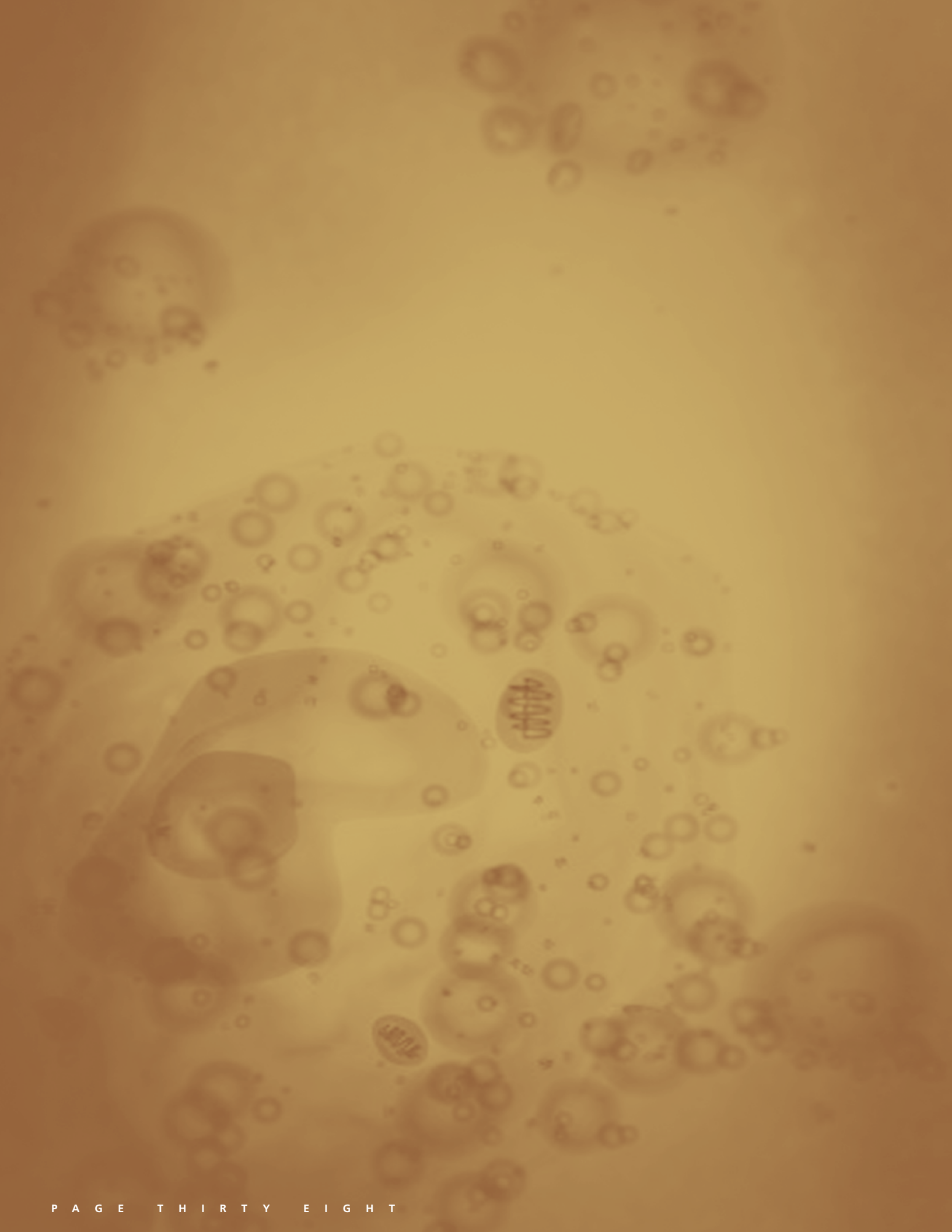
Stem Cell Network

Financial Statements
March 31, 2013 and 2012



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Independent Auditor's Report

To the Members of
Stem Cell Network

We have audited the accompanying financial statements of Stem Cell Network, which comprise the statements of financial position as at March 31, 2013, March 31, 2012 and April 1, 2011, and the statements of operations, changes in net assets and cash flows for the years ended March 31, 2013 and March 31, 2012, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements
Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian accounting standards for not-for-profit organizations, 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.

Auditor's Responsibility
Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Network's preparation and fair presentation of the financial statements 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 the Network's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion
In our opinion, the financial statements present fairly, in all material respects, the financial position of Stem Cell Network as at March 31, 2013, March 31, 2012 and April 1, 2011, and the results of its operations and its cash flows for the years ended March 31, 2013 and March 31, 2012 in accordance with Canadian accounting standards for not-for-profit organizations.

Ottawa
June 25, 2013

McLarty & Co Professional Corporation
(Authorized to practice public accounting by the Institute of Chartered Accountants of Ontario)

A Member of the MacKay Network

Stem Cell Network

Statements of Operations

For the years ended March 31,	2013	2012
Revenue		
Networks of Centres of Excellence grant (note 7)	**$ 6,088,493**	$ 5,257,972
AGM sponsorship/registration	**163,000**	-
Services in-kind (note 8)	**66,000**	66,000
Other contributions (note 8)	**55,000**	55,000
Interest	**1,824**	1,910
Other research grants (note 7)	**-**	39,783
	6,374,317	5,420,665
Expenses		
Mission Fulfillment		
Research programs (note 6)	**4,520,728**	3,973,324
Annual conference (note 6)	**388,505**	21,042
Communications and outreach (notes 6 and 8)	**318,022**	250,733
Highly qualified personnel programs (note 6)	**292,183**	218,510
CellCAN initiative	**49,373**	97,766
Foundation initiatives (notes 6 and 8)	**34,162**	171,006
Business development	**21,518**	64,700
International initiative	**18,658**	138,246
Commercialization	**1,620**	8,897
	5,644,769	4,944,224
Governance and Administration		
General and administration (notes 6 and 8)	**596,084**	507,995
SCN board and committees	**65,378**	58,457
Professional and consulting fees (note 8)	**60,901**	46,101
Amortization	**8,322**	13,113
	730,685	625,666
Excess of expenses over revenue	**$ (1,137)**	$ (149,225)

See accompanying notes to the financial statements

Stem Cell Network

Statements of Changes in Net Assets

For the years ended March 31,

	Invested in capital assets	Unrestricted	**Total 2013**	Total 2012
Balance, beginning of year	$ 10,897	$ 118,587	**$ 129,484**	$ 278,709
Excess of revenue over expenses (expenses over revenue)	(8,322)	7,185	**(1,137)**	(149,225)
Purchase of capital assets	811	(811)	**-**	-
Balance, end of year	**$ 3,386**	**$ 124,961**	**$ 128,347**	$ 129,484

See accompanying notes to the financial statements

Stem Cell Network

Statements of Financial Position

	March 31, 2013	March 31, 2012	April 1, 2011
Assets			
Current			
Cash and cash equivalents	**$ 3,498,549**	$ 3,209,487	$ 1,952,743
Restricted cash (note 4)	**50,000**	50,000	50,000
Grants receivable	**-**	139,200	-
Other receivables	**16,465**	41,333	7,233
Prepaid expenses	**34,290**	54,147	26,354
Total current assets	**3,599,304**	3,494,167	2,036,330
Capital assets (note 5)	**3,386**	10,897	23,085
	$ 3,602,690	$ 3,505,064	$ 2,059,415
Liabilities			
Current			
Accounts payable and accrued liabilities	**$ 141,710**	$ 82,837	$ 83,533
Due to government agencies	**13,004**	11,752	-
Research commitments payable	**311,940**	464,641	135,900
Contributions received in advance (note 7)	**2,975,025**	2,663,518	1,561,273
Deferred revenue from AGM sponsorship and registration	**32,664**	152,832	-
	3,474,343	3,375,580	1,780,706
Net assets			
Invested in capital assets	**3,386**	10,897	23,085
Unrestricted	**124,961**	118,587	255,624
	128,347	129,484	278,709
	$ 3,602,690	$ 3,505,064	$ 2,059,415

Commitments (note 9)

Approved by the board:

_____ Member

_____ Member

See accompanying notes to the financial statements

Stem Cell Network

Statements of Cash Flows

For the years ended March 31,	2013	2012
Operating activities		
Excess of expenses over revenue	**$ (1,137)**	$ (149,225)
Item not affecting cash		
Amortization	**8,322**	13,113
	7,185	(136,112)
Change in non-cash working capital items		
Grants receivable	**139,200**	(139,200)
Other receivables	**24,868**	(34,100)
Prepaid expenses	**19,857**	(27,793)
Accounts payable and accrued liabilities	**58,873**	(696)
Due to government agencies	**1,252**	11,752
Research commitments payable	**(152,701)**	328,741
Contributions received in advance	**311,507**	1,102,245
Deferred revenue from AGM sponsorship and registration	**(120,168)**	152,832
	289,873	1,257,669
Investing activity		
Purchase of capital assets	**(811)**	(925)
Increase in cash and cash equivalents	**289,062**	1,256,744
Cash and cash equivalents, beginning of year	**3,259,487**	2,002,743
Cash and cash equivalents, end of year	**$ 3,548,549**	$ 3,259,487
Cash and cash equivalents consists of:		
Cash and cash equivalents	**$ 3,498,549**	$ 3,209,487
Restricted cash	**50,000**	50,000
	$ 3,548,549	$ 3,259,487

See accompanying notes to the financial statements

1. Nature of operations

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

It is one of Canada's Network Centres of Excellence ("NCE"). The NCE program is administered and funded by the Natural Sciences and Engineering Research Council ("NSERC"), the Canadian Institute of Health Research ("CIHR"), and the Social Sciences and Humanities Research Council ("SSHRC"), in partnership with Industry Canada. The goal of the federal NCE program is to mobilize Canada's research talent in universities, industry and government to create new economy jobs, stimulate growth and improve the quality of life for Canadians.

The Network has been approved for $6.4 million in funding per year for the years ending March 2014 to March 2015.

2. Significant accounting policies

These financial statements are prepared in accordance with Canadian accounting standards for not-for-profit organizations. The significant policies are detailed as follows:

(a) Revenue recognition

The Network follows the deferral method of accounting for contributions, which include government grants. Funds are received from the Canadian federal government as well as private and public sector partners.

Grants and other contributions which have external restrictive covenants governing the types of activities that they can be used to fund are deferred until such time as the actual spending is incurred. Consequently, unspent grants having restrictions will be recognized as revenue in future periods when the spending occurs. Grants approved, but not received at the end of the accounting period, are accrued.

AGM sponsorship and registration are deferred until they are recognized as revenue in the year in which the related expenses 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.

(b) Contributions and services in-kind

Many organizations and individuals contribute a significant amount of volunteer effort in each year. The fair value of these services is often difficult to determine. Contributed services are not recognized in the financial statements unless a fair value can be reasonably estimated, such services are used in the normal course of operations and the provider of the services has explicitly defined the value of the services to the Network. The Network is dependent on such contributors to appropriately report the value of all contributions and services in-kind to its administrative centre.

2. Significant accounting policies (continued)

(c) Research programs expenses

Research programs expenses are recorded as expenses when they become payable. Research grants that will become payable in future periods are summarized and disclosed as commitments in the notes to the financial statements.

(d) Income taxes

The Network is not subject to income taxes.

(e) Cash equivalents

All highly liquid investments with original maturities of three months or less, including all cashable guaranteed investment certificates, are classified as cash and cash equivalents. The fair value of cash equivalents approximates the amounts shown in the financial statements.

(f) Capital assets

Purchased capital assets are recorded at cost. Donated capital assets are recorded on the statement of financial position at their estimated fair value at the contribution date, and recognized in the statement of operations based on their related amortization policy.

Capital assets are amortized on a straight-line basis using the following annual rates:

Office equipment	20% Straight-line
Computer equipment	33% Straight-line
Computer software	100% Straight-line

2. Significant accounting policies (continued)

(g) Financial instruments

(i) **Measurement of financial instruments**

The Network initially measures its financial assets and financial liabilities at fair value adjusted by, in the case of a financial instrument that will not be measured subsequently at fair value, the amount of transaction costs directly attributable to the instrument. Amounts due to and from related parties are measured at the exchange amount, being the amount agreed upon by the related parties.

The Network subsequently measures its financial assets and financial liabilities at amortized cost.

Financial assets measured at amortized cost include cash and cash equivalents, restricted cash, grants receivable and other receivables.

Financial liabilities measured at amortized cost include accounts payable and accrued liabilities, research commitments payable, contributions received in advance and due to government agencies.

The Network has not designated any financial asset or financial liability to be measured at fair value.

(ii) **Impairment**

Financial assets measured at amortized cost are tested for impairment when there are indicators of possible impairment. The amount of the write-down is recognized in net income. 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 net income.

(h) Use of estimates

The preparation of financial statements in conformity with Canadian accounting standards for not-for-profit organizations requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the balance sheet date and the reported amounts of revenues and expenses during the year. Items requiring the use of significant estimates include the useful lives of capital assets, accrued liabilities, contributions received in advance and allocation of salaries and benefits expenses. These estimates are reviewed periodically and adjustments are made to income as appropriate in the year they become known. Actual results could differ from those estimates.

2. Significant accounting policies (continued)

(i) Allocation of expenses

The Network allocates salaries and benefits based on an estimate of the percentage of time each person typically spends on each area. The Network has applied this on a consistent basis.

3. Impact of the change in the basis of accounting

Effective April 1, 2012, the Network elected to apply the standards in Part III of the CICA Accounting Handbook for not-for-profit organizations in accordance with Canadian Accounting Standards for Not-for-profit organizations (ASNPO).

These are the first financial statements prepared in accordance with this new framework which has been applied retrospectively. The accounting policies set out below have been applied in preparing the financial statements for the year ended March 31, 2013, the comparative information for the year ended March 31, 2012 and in the preparation of an opening balance sheet as at April 1, 2011, which is the organization's date of transition.

The Network previously issued financial statements for the year ended March 31, 2012 using generally accepted accounting principles prescribed by Part V of the CICA Handbook.

The adoption of ASNPO has had no impact on the previously reported assets, liabilities and net assets of the Network, and accordingly, no adjustments have been recorded in the comparative statements of financial position, statement of operations and statement of cash flow. Certain of the organization's presentation and disclosures included in these financial statements reflect the new presentation and disclosure requirements of ASNPO.

4. Restricted cash

Restricted cash is invested in a non-redeemable guaranteed investment certificate (GIC) and is held by the Network's bank as collateral for their Visa account. The non-redeemable GIC bears interest at 0.9% and matures on March 19, 2014.

5. Capital assets

			March 31, 2013
	Cost	Accumulated amortization	Net book value
Office equipment	$ 11,643	$ 9,945	$ 1,698
Computer equipment	73,642	71,954	1,688
Computer software	7,468	7,468	-
	$ 92,753	$ 89,367	$ 3,386

5. Capital assets (continued)

	March 31, 2012		
	Cost	Accumulated amortization	Net book value
Office equipment	$ 11,643	$ 7,363	$ 4,280
Computer equipment	72,830	66,213	6,617
Computer software	7,468	7,468	-
	$ 91,941	$ 81,044	$ 10,897

	April 1, 2011		
	Cost	Accumulated amortization	Net book value
Office equipment	$ 11,643	$ 5,478	$ 6,165
Computer equipment	71,905	54,985	16,920
Computer software	7,468	7,468	-
	$ 91,016	$ 67,931	$ 23,085

6. Allocation of expenses

Salaries and benefits of $778,323 (2012 - $784,458) have been allocated as follows:

	2013	2012
Salaries and benefits:		
General and administration	**$ 429,352**	$ 395,764
Communications and outreach	**163,333**	140,904
Foundation initiatives	**34,162**	100,913
Research programs	**65,003**	66,213
Highly qualified personnel programs	**65,003**	66,213
Annual conference	**21,470**	14,451
Total	**$ 778,323**	$ 784,458

7. Contributions received in advance

	2013	2012	2011
Networks of Centres of Excellence (NCE) Funds			
Balance, beginning of year	**$ 2,663,518**	$ 1,521,490	$ 1,371,148
Contributions from the Networks of Centres of Excellence	**6,400,000**	6,400,000	6,400,000
Less: amount recognized as Networks of Centres of Excellence grant revenue	**(6,088,493)**	(5,257,972)	(6,249,658)
	2,975,025	2,663,518	1,521,490
Other funds			
Balance, beginning of year	**-**	39,783	77,283
Less: amounts recognized as other research grants revenue	**-**	(39,783)	(37,500)
	-	-	39,783
	$ 2,975,025	$ 2,663,518	$ 1,561,273

NCE funds are managed in accordance with the funding agreement between the granting councils, the University of Ottawa and the Stem Cell Network. A copy of the funding guidelines can be found on the NCE website: www.nce.gc.ca.

8. Related party transactions

The Network is related to the University of Ottawa ("the University") by virtue of the fact that the University is its host institution under the Networks of Centres of Excellence program.

Under an agreement, the University provides accounting and administrative support services as well as office space and furniture without charge to the Network. The value of the in-kind contributions received for services in fiscal 2013 is estimated to be $66,000 (2012 - $66,000). This amount is recorded in general and administration $48,000 (2012 - $48,000) and professional and consulting fees $18,000 (2012 - $18,000). Effective July 2008, the Network, the University and the Ottawa Hospital Research Institute (OHRI) have an agreement that the OHRI provides the Network with office space and information technology support services.

Included in other contributions revenue is $55,000 (2012 - $55,000) from the University.

During the year ending March 31, 2009, as part of its mandate to catalyze new models for partnering and engage the public and philanthropic community in stem cell research, the Network supported the establishment of the Canadian Stem Cell Foundation (CSCF), a not-for-profit corporation and registered charity. The CSCF has the following specific objectives:

(a) To conduct or commission research on stem cells, regenerative medicine and associated technologies, and the clinical applications thereof for the prevention, diagnosis and treatment of diseases, and to communicate the results thereof to interested individuals, groups, organizations, academics, industries, governments and the public at large.

8. Related party transactions (continued)

(b) To provide educational programs to educate the public about the benefits and advances in Stem Cell Research.

The Network is related to the CSCF by virtue of the fact that for a portion of the year it has seconded one staff member to the CSCF to support its start-up activities at no charge. Until February, 2013, the Network paid for the employee's salary and benefits. Furthermore, at March 31, 2013, a member of the Network's board of directors' and an executive of the Network are two of the seven directors of the Foundation.

During the year ending March 31, 2013, the Network expensed $nil (2012 - $52,146) of unrestricted funds in support of the governance and operations of CSCF. It also incurred a further $nil (2012 - $17,947) of restricted funds in direct costs on Foundation-related activities that fall within the mandate of the Network. These expenditures are included as Foundation initiatives expenses on the statement of operations. Furthermore, the Network expensed $25,764 (2012 - $nil) of restricted funds which is included in the Communication and outreach expenses on the statement of operations. Additionally, the Network provided management, staff and other in-kind support valued at $34,162 (2012 - $100,913) to the Foundation at no charge. From this amount, $34,162 (2012 - $86,397) is paid out of restricted funds and is included in Foundation initiatives expenses on the statement of operations.

With the exception of the in-kind contributions from the University which are reported at fair value, the transactions between related parties are recorded at the exchange amount, which is the amount established and agreed to between the parties.

9. Commitments

At March 31, 2013, the Network has specifically committed to the future research grants, training programs and other service agreements set out below that are not accrued for in the Network's financial statements as they are not yet payable. The future commitments for the Network to be funded by the contributions received in advance and to be received in the future are as follows:

	2014	2015
Approved research grants	**$ 4,804,084**	$ 3,227,327
Approved training programs	**205,000**	89,000
Other	**200,850**	214,750
	$ 5,209,934	$ 3,531,077

10. Capital management

The Network considers its capital to consist of contributions received in advance and unrestricted net assets.

	2013	2012
Contributions received in advance	**$ 2,975,025**	$ 2,663,518
Unrestricted net assets	**124,961**	118,587
	$ 3,099,986	$ 2,782,105

The Network receives the majority of its funding from the Networks of Centres of Excellence (NCE). NCE funds are managed in accordance with the funding agreement between the granting councils, the University of Ottawa and the Network. The funding is restricted and is to be used as a catalyst for enabling the translation of stem cell research to clinical applications, commercial products, or public policy. A copy of the funding guidelines can be found on the NCE website: www.nce.gc.ca. As at March 31, 2013 management asserts that the Network is in compliance with the funding guidelines.

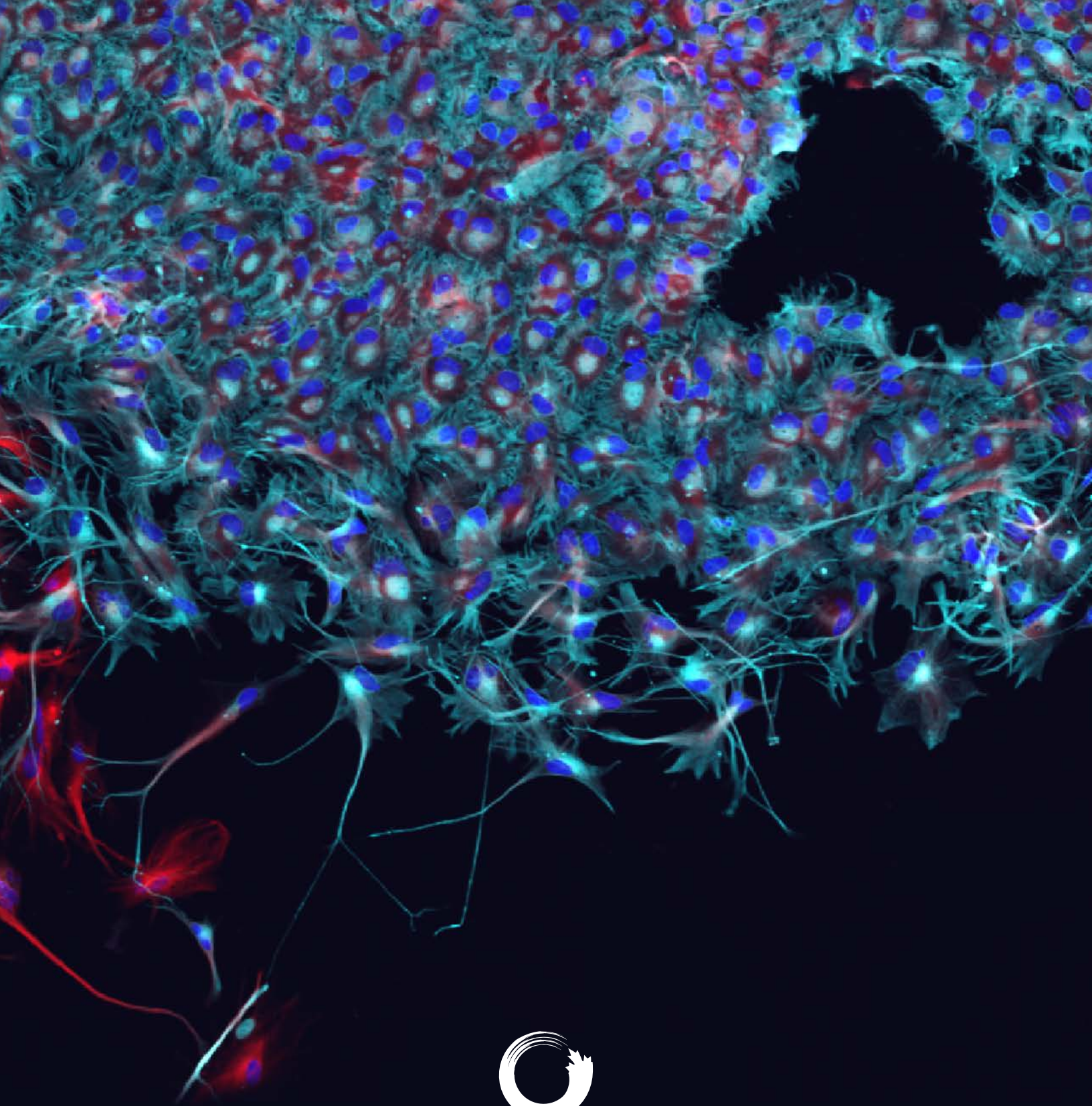
Unrestricted net assets are principally used to support those networking, partnering and commercialization objectives of the Network that are ineligible for reimbursement under the NCE program guidelines.

11. Financial risks

It is management's opinion that, unless otherwise noted, the Network is not exposed to significant interest rate, currency, liquidity, market or credit risks arising from these financial instruments.

12. Comparative amounts

The financial statements have been reclassified, where applicable, to conform to the presentation used in the current year. The changes do not affect prior year earnings.



Stem Cell Network
Réseau de cellules souches

www.stemcellnetwork.ca