ENDLESS POSSIBILITIES

2018 Annual Report

CCRM

Commercializing
Living Therapies

CCRM is a Canadian, public-private partnership supporting the commercialization of cell and gene therapies with strategic funding, dedicated infrastructure and specialized business and scientific expertise. By partnering with leading research institutions to launch new ventures, attracting existing enterprises with enabling contract services and scaling emerging companies by catalyzing investment, CCRM is accelerating the translation of promising technologies, processes and therapies into life-changing health outcomes for patients.

These therapies and technologies have the potential to transform health care, with the promise to treat, manage and perhaps cure some of the most debilitating and costly diseases in the world today. Regenerative medicine, including cell and gene therapy, harnesses the power of (stem) cells, biomaterials, molecules and genetic modification to repair, regenerate or replace diseased cells, tissues and organs. Our rich pipeline of new and potentially life-changing cell, gene and regenerative medicine-based treatments will reach patients more effectively if the translation from laboratory to market is accelerated and de-risked in a coordinated, collaborative and capital-efficient manner.

CONTENTS

OUR MISSION

CCRM's mission is to generate sustainable health and economic benefits through global collaboration in cell and gene therapy, and regenerative medicine.

LAUNCH *SCALE* *ATTRACT*

OUR VISION

To be the preferred global destination for the best people, technologies, clinical trials, companies and investments in regenerative medicine.

To be the premier global enabler of clinically-tested, revolutionary new medical therapies and foundational technologies.

BOARD OF DIRECTORS

MANUFACTURING. WE'RE READY.

Peter Zandstra
Chief Scientific Officer

Michael May
President and CEO

Greg Bonfiglio
Chair, Board of Directors

2018 has been another eventful year for CCRM!

The most notable achievement, one that touches all of our employees and many of our colleagues at the University Health Network (UHN), but will also have an impact on Canada and the broader cell and gene therapy community, was the opening of a 10 suite, Good Manufacturing Practices (GMP) facility in CCRM's space at MaRS, adjacent to leading research hospitals.

It was rewarding and gratifying to officially launch the Centre for Cell and Vector Production (CCVP) in October, with a patient, UHN leaders and government funders at the podium, and industry, academia and more government and not-for-profit partners in the audience.

The idea of CCVP was conceived many years ago among the leading clinical researchers at UHN, and before CCRM was established. Once on the scene, CCRM encouraged the building of a GMP facility that was more than double the original size and one that would cater to industry as well as local academics.

From day one, we have identified manufacturing as a pillar to focus our energies and develop our expertise to support our academic and industry partners. With the Centre for Advanced Therapeutic Cell Technologies (CATCT) meeting its mandate to find innovative ways to industrialize cell manufacturing, and this new GMP facility ready to adopt these efficient and cost-effective procedures at the clinical stage, we are confident CCRM will deliver on the needs of our partners and patients, and contribute to Canada being a leader in life sciences.

Today, the efforts of countless people have been realized and Toronto has a stunning, leading-edge facility where cells and viral vectors are being manufactured for Phase I/II clinical trials to prepare for the upcoming surge in demand from patients for cell and gene therapies. Flip the pages of this annual report to see photos, and please contact us if you would like to partner with CCRM for your cell and gene manufacturing.

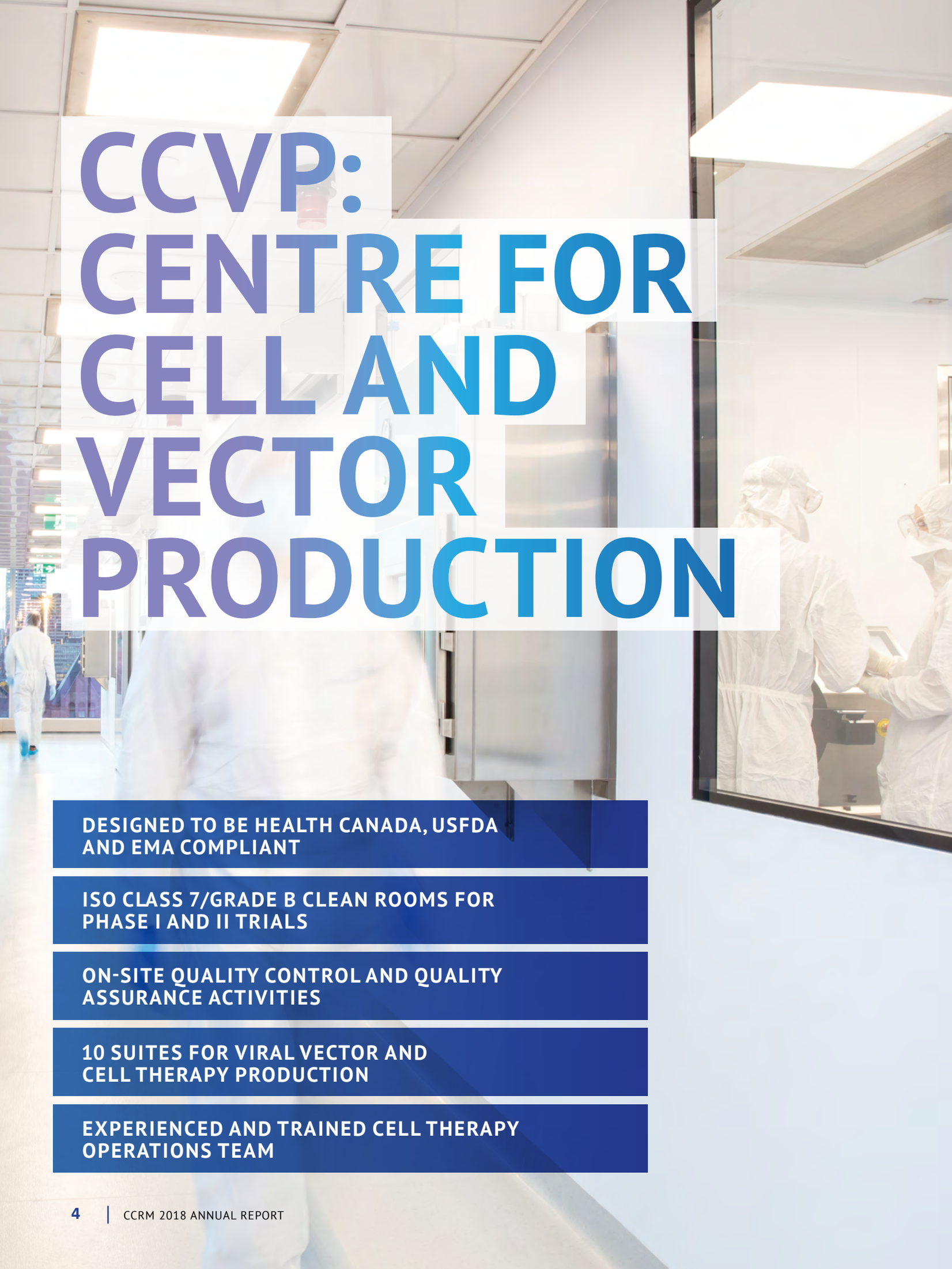
None of our achievements would be possible without the support of the Government of Canada. The Networks of Centres of Excellence (NCE) gave us the seed funding to launch in 2011, the Federal Economic Development Agency for Southern Ontario matched funding from GE Healthcare so we could establish CATCT and, as we announced earlier this year, the NCE has funded us for another five year term. All told, we've been the recipient of $50 million from the federal government, of which the initial $15 million was leveraged to $100 million, with other support from government and industry.

We have big plans for this latest funding.

We must also recognize the Government of Ontario for its support of CCRM, including its contributions to the construction of CCVP and its establishment of the Ontario Institute for Regenerative Medicine, a key partner of CCRM and the community in Ontario.

As always, a heartfelt thank you to our employees, our strategic partners, our institutional partners and our fellow centres of excellence as we all work towards a similar vision of creating a thriving regenerative medicine industry in Canada and making our mark on the global stage.

"From day one, we have identified manufacturing as a pillar to focus our energies and develop our expertise to support our academic and industry partners."



CCVP: CENTRE FOR CELL AND VECTOR PRODUCTION

- DESIGNED TO BE HEALTH CANADA, USFDA AND EMA COMPLIANT
- ISO CLASS 7/GRADE B CLEAN ROOMS FOR PHASE I AND II TRIALS
- ON-SITE QUALITY CONTROL AND QUALITY ASSURANCE ACTIVITIES
- 10 SUITES FOR VIRAL VECTOR AND CELL THERAPY PRODUCTION
- EXPERIENCED AND TRAINED CELL THERAPY OPERATIONS TEAM

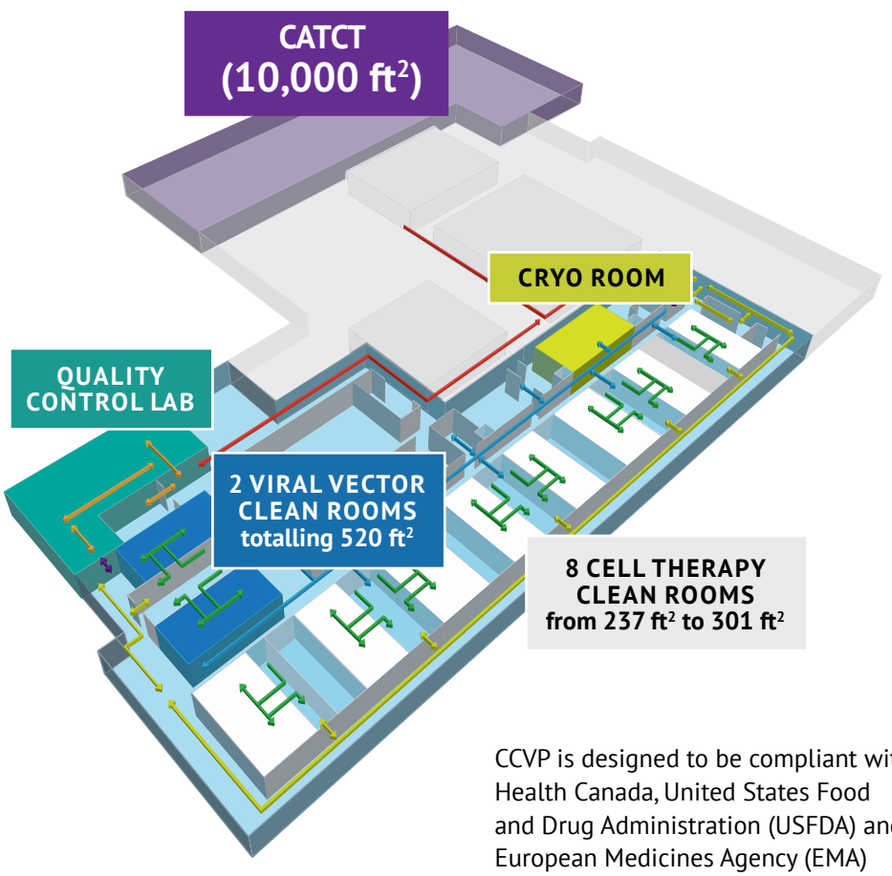
ALL UNDER ONE ROOF

CCRM and the University Health Network (UHN) have partnered to design and build the Centre for Cell and Vector Production (CCVP). This facility is co-located with the Centre for Advanced Therapeutic Cell Technologies (CATCT), where process development and optimization are delivering advanced manufacturing solutions for global clients.

Testing in our Quality Control Lab

A peek into one of the cell therapy clean rooms

Hallway adjacent to the eight cell therapy clean rooms

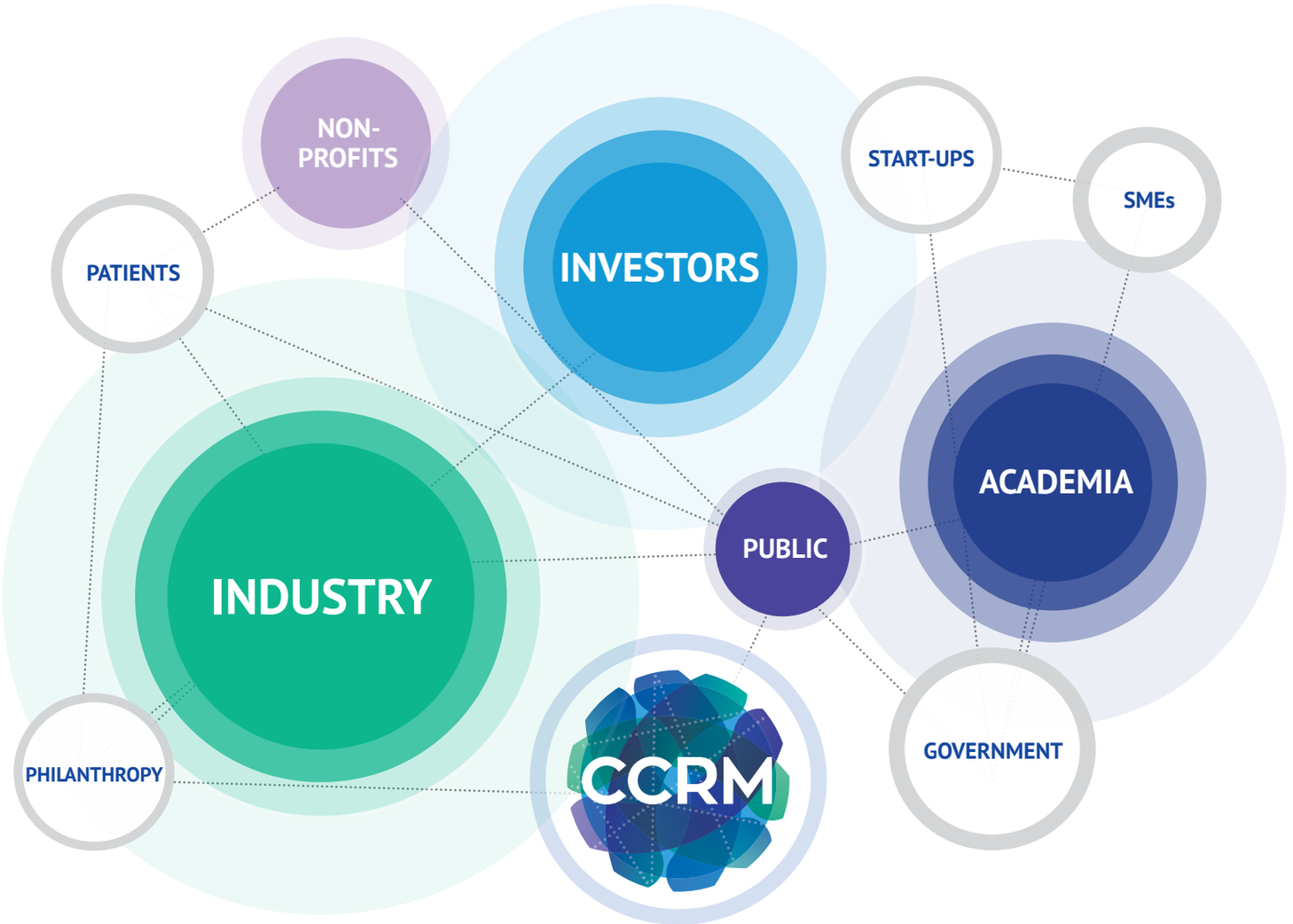


20,000 ft² CCVP Facility

CCVP is designed to be compliant with Health Canada, United States Food and Drug Administration (USFDA) and European Medicines Agency (EMA) good manufacturing practices (GMP) for early phase materials in the cell and gene therapy markets. Specifically, the production of materials to support Phase I and Phase II in human clinical trials. Our GMP facility will assist with the transfer to clients' manufacturing facilities or to a contract manufacturing organization (CMO).

CCVP features 10 class B clean rooms, cryogenic storage, a cell irradiator, an in-house quality control (QC) lab, a robust quality management system, and specialized cell processing hardware. Services offered in CCVP include full manufacturing and release of cell and viral vector materials, QC testing, access to clean rooms, cell bank creation, training services, supplier management and audit support services.

CCRM IN THE RM ECOSYSTEM



NEW INTELLECTUAL PROPERTY	PORTFOLIO COMPANIES	ENABLING TECHNOLOGY	NETWORK BUILDING	HIGHLY QUALIFIED PERSONNEL	FINANCING RAISED BY PORTFOLIO COMPANIES	INFRASTRUCTURE	ATTRACTING ANCHOR FIRMS
10 patent families supported	**6** new companies	**$40M** CATCT facility	**100+** industry partners	**85** staff	**$290M**	**40,000 ft²** facility in MaRS	GE Healthcare, BlueRock Therapeutics

INSIDE CCRM

ATTRACT

business, regulatory and IP services with commercialization and technology expertise

LAUNCH

technology evaluation and development, supporting company conception, incubation and launch

ADVANCE

cell reprogramming and engineering, technology translation and protocol development

BRIDGE

pre-clinical to commercially-ready cell and gene therapy process optimization and scale-up within the CATCT

DELIVER

GMP services for cell and gene therapy products and viral vectors; management and oversight of quality systems

SCALE

market assessments and diligence, financing, investor engagement and portfolio management

PEOPLE

FUNDING

FACILITIES

Cell image:
Loop through the cells - Radhika Rao

A YEAR OF HIGHLIGHTS

JANUARY - NEW YEAR, NEW CLIENT

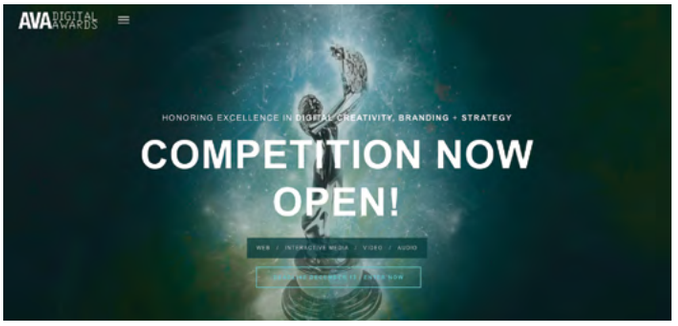
We kicked off 2018 by taking on a new client in the Centre for Advanced Therapeutic Cell Technologies (CATCT). Cellular Biomedicine Group Inc. (CBMG) is GE Healthcare's first client for its FlexFactory™ platform. The process development work is happening at CCRM in Toronto. Read about the announcement here.

bsi. ISO 9001:2015 Quality Management

FS 675969

FEBRUARY - CERTIFIED "READY TO GO!"

ISO 9001 is a standard that sets out the requirements for a quality management system. It helps businesses and organizations ensure that their products and services consistently meet customers' requirements and that quality is consistently improved. The certification also signifies that CCRM meets all applicable statutory and regulatory requirements.



FEBRUARY - PLATINUM AWARD FOR CORPORATE VIDEO

We've had great feedback from our stakeholders regarding CCRM's corporate video, so winning a platinum award, as judged by the international Association of Marketing and Communications Professionals, was just the icing on the cake. To watch this video, and many others in our growing library, please click here.

MAY - MILESTONE: CCRM REPROGRAMS ITS 100TH PATIENT iPSC LINE

CCRM has generated over 200 induced pluripotent stem cell (iPSC) lines derived from 100 patients in our development lab. The team provides services including cell reprogramming, technology translation, protocol development and gene editing in PSC lines. It has started working in the immunotherapy space and this will be a focus for the coming year.

JULY - $15M IN FEDERAL FUNDING ANNOUNCED

CCRM was awarded $15 million from the Networks of Centres of Excellence program to continue with its efforts to generate sustainable health and economic benefits for Canadians through global collaboration in regenerative medicine technologies, and cell and gene therapies. The funding from the Government of Canada reflects the impact of CCRM's past achievements, future plans and Canada's leading role in regenerative medicine.

FALL - "SCIART" EXHIBIT AT TORONTO PEARSON AIRPORT FEATURES CELLS I SEE ENTRIES

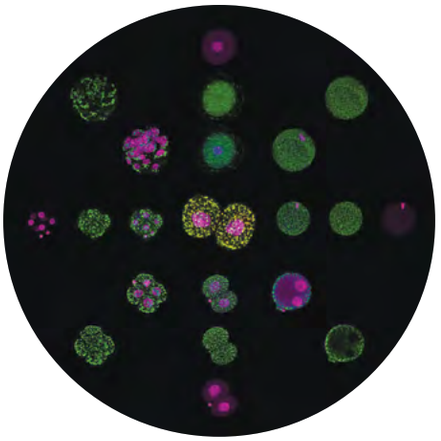
Canadian stem cell images were on display for the world to see – or at least the millions of passengers who travel through Toronto's airport. In partnership with the University of Toronto's Research2Reality, CCRM and Stem Cell Network shared images from recent and past Cells I See competitions. The contest is in its 10th year!

DECEMBER - TOURS, TOURS AND MORE TOURS!

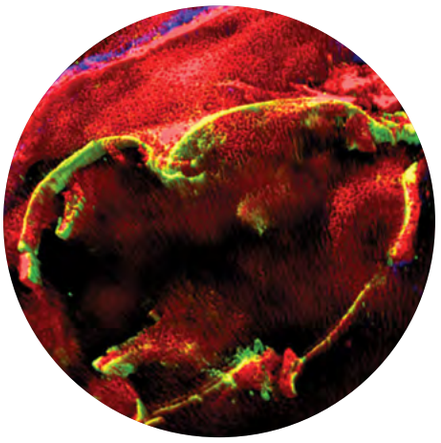
Showing no signs of slowing down, CCRM continued to welcome groups from across Canada and around the world. They are typically university students, academics, industry professionals and government representatives (Canadian and foreign), and curious to learn about CCRM's commercialization model and how we are accelerating regenerative medicine at home and abroad.

Photo: Victorian Healthcare Association delegation

Cells I See Winners 2018



Grand Prize: Embryonic Clock by Matthew Hildebrandt (The Hospital for Sick Children)



People's Choice: Heart of Gold by Hesham Soliman (University of British Columbia)

NEW CELL THERAPY MAY OFFER REGENERATIVE SOLUTION FOR PATIENTS SUFFERING FROM BACK PAIN

Flagg Flanagan, CEO of DiscGenics

Degenerative disc disease (DDD) is one of the most common causes of chronic low back pain, a condition that affects millions of adults in North America alone. Patients can try exercise, physical therapy and pain medication to dull or temporarily alleviate the symptoms. More permanent, yet more invasive treatments, including spinal surgery, are also available. But what if there was a different option? What if regenerative medicine could provide a lasting solution?

Enter DiscGenics, a privately held, clinical stage regenerative medicine company located in Salt Lake City, Utah, specializing in the development of cell therapies to alleviate pain and restore function in patients with degenerative diseases of the spine. DiscGenics has developed a homologous, allogeneic (off-the-shelf), injectable disc cell therapy referred to as IDCT.

"DiscGenics is developing a potentially curative solution for mild to moderate degenerative disc disease," says Flagg Flanagan, Chief Executive Officer and Chairman of the Board for DiscGenics. "IDCT is an allogeneic therapy engineered from cells that come from the intervertebral disc, which we believe make it an ideally suited treatment for healing a degenerated disc."

IDCT is the first product candidate to use the company's patented cell culture manufacturing technology to generate its discogenic cell platform. Discogenic cells are highly specialized therapeutic progenitor cells engineered to uniquely address the complex environment of the degenerated disc. IDCT is being evaluated in a Phase I/II clinical trial for the treatment of patients with mild-to moderate lumbar DDD. A single dose of the cell therapy is injected into the painful disc non-surgically. Preclinical studies show IDCT can reduce pain and disability caused by inflammation within the diseased disc.

Earlier this year, DiscGenics partnered with CCRM and GE Healthcare to conduct process, assay and media development for DiscGenics' manufacturing process. The work is being done in the Centre for Advanced Therapeutic Cell Technologies (CATCT) in Toronto, a collaboration between CCRM and GE Healthcare that also receives matching financial support from the Federal Economic Development Agency for Southern Ontario.

The production begins with isolating discogenic cells from donated adult human intervertebral disc tissue. These partially differentiated stem cells are subsequently expanded for therapeutic application, combined with a delivery vehicle and cryopreserved for off-the-shelf use. The discogenic cells are manufactured in a current Good Manufacturing Practices (cGMP) environment and subjected to extensive testing for identity, purity, potency and safety prior to use. This approach enables DiscGenics to introduce restorative progenitor cells to the damaged disc and offers a therapeutic option for patients.

"In cell therapies, the scale-up from Phase I cells that are used in Phase I/II trials to Phase III commercial cells is quite an endeavor. We consider CCRM to be pivotal in helping us transition from that Phase I manufacturing to the Phase III commercialization of our manufacturing process," says Flanagan. "CCRM and GE Healthcare are the best in class in terms of scale-up and scale-out development for our manufacturing process."

CATCT was established in 2016 to accelerate the development and adoption of cell manufacturing technologies that improve patient access to novel regenerative medicine-based technologies and cell and gene therapies. CATCT is co-located with CCRM's brand new cGMP facility, the Centre for Cell and Vector Production, a partnership with University Health Network.

"CCRM and GE Healthcare's scientists are top notch, with a lot of rigour in their process development techniques, which we think is probably the best in the industry. The equipment in CATCT is state-of-the-art to do this process development," Flanagan says. "We believe that we are very aligned in terms of the passion and rigour that is so important to deliver our cells to patients in need."

"We consider CCRM to be pivotal in helping us transition from that Phase I manufacturing to the Phase III commercialization of our manufacturing process."

TRAILBLAZER IN T CELL DEVELOPMENT EMBARKS ON COMMERCIALIZATION JOURNEY

Dr. Juan Carlos Zúñiga-Pflücker

Dr. Juan Carlos Zúñiga-Pflücker is a pioneer in the field of T cell developmental biology. He discovered the OP9-DL co-culture system, which is considered the gold standard for generating T cells in research laboratories. He is a senior scientist at Sunnybrook Research Institute and a Professor and Chair of the Department of Immunology at the University of Toronto. He also holds the Canada Research Chair in Developmental Immunology. His career has been devoted to studying the mystery of how bone marrow hematopoietic progenitors travel to the thymus and emerge as T cells. Now he is using that knowledge to develop a treatment to combat immunodeficiencies, caused by chemotherapy and bone marrow transplant, where T cell counts and function are slow to recover.

T cells are white blood cells that play an important role in coordinating a healthy immune response and fighting infections. T cells mature in the thymus, a small organ located in the upper-front part of the chest, and develop from bone marrow-derived blood stem cells. A blood stem cell has the ability to self-renew and mature into all types of blood cells; in this case, become a mature T cell.

Earlier this year, Dr. Zúñiga-Pflücker received a one-year Disease Team Grant worth $250,000 from the Ontario Institute for Regenerative Medicine (OIRM), CCRM's commercialization partner. The funding will support a project that aims to generate large quantities of white blood T cells from blood stem cells for clinical use for the purposes of immune regeneration.

"Partnering with CCRM to apply for the OIRM grant was a valuable opportunity to test and scale-up production of our progenitor T cells, leveraging on CCRM's manufacturing capabilities," he says. The progenitor T cells, produced from blood stem cells, will be used in a clinical trial headed by co-investigator Dr. Donna Wall at SickKids. The trial will validate the safety and efficacy of progenitor T cells delivered to immune-deficient patients.

The research supported by OIRM addresses an important clinical need, says Dr. Zúñiga-Pflücker. "We want to establish a better and faster way to allow new T cells to emerge in patients receiving a bone marrow stem cell transplant. Since T cells play such an important role in maintaining a healthy immune system, we can't survive for very long without them."

Dedicated to getting results out of the lab and into the clinic, Dr. Zúñiga-Pflücker's leading-edge research has paved the road to a commercialization venture that focuses on scale-up of progenitor T cell production, through a partnership with CCRM, MaRS Innovation, Sunnybrook Research Institute and the University of Toronto. The new start-up, "Notch Therapeutics," is being established in collaboration with Dr. Peter Zandstra, Professor at the University of British Columbia and University of Toronto, and Chief Scientific Officer at CCRM, to develop an alternative approach to making T cells.

Notch Therapeutics is combining intellectual property from projects that started in the Zandstra and Zúñiga-Pflücker labs nearly 10 years ago to understand the molecular cues that push stem cells to become T cells. Zúñiga-Pflücker's research team has developed a microbead system that presents a key molecule derived from the Notch signaling pathway, which is crucial for T cell development, and enables large-scale production of stem cell-derived T cells, he says.

"The aim of the company is to provide a way to make T cells from multiple sources of stem cells and provide a platform for research and development, and a better way of making T cells and their applications for treating cancers or immune deficiencies," he says.

As a founder and scientific advisor for Notch Therapeutics, Dr. Zúñiga-Pflücker is supporting the microbead technology transfer at CCRM to be in-licensed by the start-up company in the near future. In the meantime, CCRM is supporting cell therapy process development in its Development and Reprogramming lab. In a couple of years, the work will transition into CCRM's Good Manufacturing Practices (GMP) facility – the Centre for Cell and Vector Production, a 10 clean room GMP facility in downtown Toronto.

When asked what the future holds for regenerative medicine, Dr. Zúñiga-Pflücker says: "Truly, to use a [University of Toronto] term, it's boundless."

CUSTOMER SERVICE EXCELLENCE IN COMMERCIALIZING REGENERATIVE MEDICINE

SÍOFRADH MCMAHON

MSc, Senior Manager, Clinical Translation and Regulatory Affairs

Síofradh leads the regulatory affairs and clinical translation function. She works with academic and industry partners to advance promising products and technologies to commercialization. Having worked worldwide, Síofradh brings more than a decade of experience in pharmaceutical and biotech regulatory affairs and policy. She is an active member of the Alliance for Regenerative Medicine's Regulatory and Value & Access working groups and lends her expertise to groups in Canada too.

STEVEN MOLINSKI

MSc, PhD, Manager, Contract Services

Steven is an experienced biochemist with expertise in drug discovery and personalized medicine, and has played key roles at several biotechnology companies in Toronto. At CCRM, he leads business development and contract services for CCRM's process development and Good Manufacturing Practices (GMP) capabilities. Steven enjoys working closely with CCRM's interdisciplinary teams, as well as building relationships with leaders at global pharmaceutical companies developing cutting-edge cell and gene therapies.

HELEN PEJNOVICH

P. Eng., Operations Director, Centre for Cell and Vector Production (CCVP)

Helen is a Professional Engineer with over 20 years of industry experience. With a strong commitment to excellence in customer service, she brings strategic operational and business management experience to lead the operations team at CCVP. Helen spent over a decade at Apotex, Canada's largest generic pharmaceutical company, where she held progressive leadership roles in project management, facility management, manufacturing and supply chain.

VENKATESH PONEMONE

MSc, PhD, MBA, Operations Manager, GMP Manufacturing

Venkatesh manages the delivery of small to large-scale clinical batches of cell and gene therapy products in CCRM's Centre for Cell and Vector Production. He brings more than nine years of cell therapy GMP manufacturing and clinical research experience in regenerative medicine. Venkatesh is committed to taking translational medicine from the bench to bedside to develop therapeutic treatments for patients.

INCUBATION TEAMS

AN OPTIMAL ENVIRONMENT FOR SUCCESS

CCRM has developed a model for incubating new companies that we believe will improve their chances for long-term success. We create new companies based on Canadian innovations that address unmet market opportunities in regenerative medicine. Ready access to the expertise and infrastructure at CCRM, as well as to CCRM's growing entrepreneur and investor networks, is key to accelerating new company concepts towards successful launch and external investment.

To generate new company ideas, our technology scouting team evaluates over 100 technologies each year. Selected concepts are assigned to incubation teams consisting of in-house technical, intellectual property, regulatory and business experts. Championed by a CCRM executive, teams work to complete quarterly objectives that are used to continuously re-assess the commercial viability and critical priorities of each program.

In 2019, CCRM and MaRS Innovation will launch a company based on intellectual property from both University of Toronto and Sunnybrook Research Institute. The new company, led by entrepreneur Ulrik Nielsen, will develop stem cell-derived T cells for the next generation of cellular immunotherapies. Expect many more such announcements in the future. (Turn to pages 12 and 13 for more details.)

PORTFOLIO COMPANIES

INVESTING IN WINNERS

It has been a banner year for CCRM's portfolio companies. At this time, the companies CCRM has invested in are heralding great wins and have collectively raised $230 million in 2018.

AVROBIO completed an initial public offering, raising US$100 million from public investors on the NASDAQ exchange. AVRO's share price jumped up 64 percent on the first day of trading, reflecting investor enthusiasm for their revolutionary gene therapies to cure rare diseases.

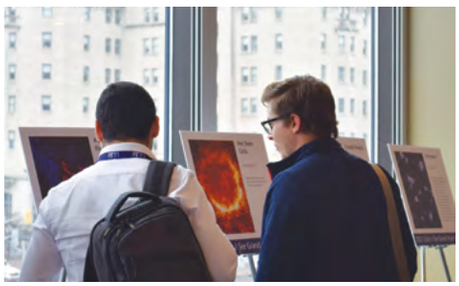
ExCellThera, CCRM's joint spinoff with IRICoR, completed its 25 patient Phase I/II clinical trial and initiated a second trial, thereby furthering its development of proprietary molecules and bioengineering solutions to expand blood stem cells for therapeutic use.

CCRM recently invested in Endogena Therapeutics, a company regulating endogenous progenitor cells for controlled tissue regeneration. Endogena is looking to treat unmet medical needs associated with aging and genetic diseases, and its lead program targets retinal progenitor cells to restore vision.

In the coming year, CCRM will continue to seek opportunities to scale companies from Canada and abroad, and will look to add other innovative start-ups to its portfolio.

WHEN TWO (OR MORE!) HEADS ARE BETTER THAN ONE

If it takes a village to raise a child, the same can be said for educating and training that child. With that in mind, CCRM often chooses to co-host events with partners. Here are some examples from 2018.



The Till & McCulloch Meetings, in partnership with the Stem Cell Network, is Canada's stem cell research conference for the community's clinicians, bioengineers, stem cell scientists and scientists to-be. This year's event in Ottawa (November 12-14) attracted a record 500 attendees.

Photo credit: Lisa Willemse

The Business of Regenerative Medicine seeks to bring together industry professionals – academics and investors are also welcome – to advance their understanding of the field and gain insight and solutions to industry challenges. Attendees hear talks and panel discussions from entrepreneurs, industry and scientific leaders, and networking is an important component of this meeting. The University of Pennsylvania hosted this year's event, rounding out the partnership with Case Western Reserve University, Georgia Tech and the Harvard Stem Cell Institute. CCRM is still the only Canadian organizer. Get more details here.

Summer by Design, with Medicine by Design and the Rotman School of Management, invites high-performing PhD candidates and post-doctoral fellows from around the world to come to Toronto and learn about translating and commercializing regenerative medicine research. This year, an equal number of students from the University of Toronto and its affiliated hospitals also took part. Here's a recap of the 2018 program.

Photo credit: Eugene Grichko, Rotman School of Management, University of Toronto

The mandate of the Clinical Translation Education Group (CTEG) is to provide high quality, biotherapeutics-focused, Canadian-specific educational content. We coordinate efforts to reduce redundancies between our groups and to reallocate resources to develop training within each organization's major areas of focus. Along with BioCanRx, CellCAN, Ontario Institute for Cancer Research, Ontario Institute for Regenerative Medicine and Stem Cell Network, we hosted a successful workshop on intellectual property and entrepreneurship. We videotape the talks so others can benefit from the speakers' insights.

We round out our training and education efforts by developing programming at conferences, leading webinars, hosting student ("trainee") tours at CCRM, giving conference presentations and keynotes and publishing a blog. Sometimes we financially support groups that are excelling at their own training and education efforts – like Let's Talk Science's StemCellTalks.

Despite not having our own network of trainees to support, CCRM recognizes how essential it is to educate the upcoming academic and industry leaders in our field and we take this responsibility seriously.

Photo credit: 2018 Amna Hyder

OIRM

PARTNERING TO SUPPORT THE COMMERCIALIZATION OF REGENERATIVE MEDICINE IN ONTARIO

The Ontario Institute for Regenerative Medicine (OIRM) collaborates with CCRM to support the development of Ontario-sourced technologies into spin-off companies, industry investment and the relocation of established companies to Ontario. The Ontario Government provides funding to OIRM to support the commercialization partnership with CCRM, which provides commercialization and cell manufacturing services to OIRM members.

Four years into the partnersip with OIRM, CCRM has streamlined its commercialization consulting offerings to focus on the following areas: Market, Intellectual Property, Regulatory and Manufacturing. CCRM leverages unique technology platforms, infrastructure, people and networks to advance Ontario's regenerative medicine assets.

Progress this year includes the following:

- triaging invention disclosures;
- identifying technology for filing U.S. provisional patent applications;
- identifying technology for internal incubation (see page 16);
- conducting commercialization consulting engagements with OIRM investigators;
- generating iPSC lines for OIRM investigators; and,
- completing gene editing projects for OIRM investigators.

Finally, OIRM and CCRM have partnered on multiple educational events to provide information and resources to help further commercialization goals and support the community.

MEDICINE BY DESIGN

A COLLABORATION WITHOUT BOUNDS

Medicine by Design is a regenerative medicine initiative at the University of Toronto that undertakes transformational research to improve health outcomes and create value. It collaborates with CCRM to proactively identify and plan translational pathways for its discoveries and assess the commercial potential of the projects it funds.

Medicine by Design and CCRM also partner to deliver initiatives such as Summer by Design, an international summer program for graduate students and post-doctoral fellows focused on the translation and commercialization of regenerative medicine. The two organizations are co-located on the same floor in Toronto's MaRS Discovery District, creating a globally competitive hub for regenerative medicine.

Built on the model of a design studio, Medicine by Design brings together 110 scientists, engineers and clinicians from across the University of Toronto and its affiliated hospitals to conceive, create and test strategies to address critical problems in regenerative medicine.

Converging across disciplines, these researchers generate and use emerging methods such as computational modelling and synthetic biology to deepen understanding of core biological concepts and devise new therapeutic approaches. Medicine by Design is made possible thanks in part to a $114 million investment from the Canada First Research Excellence Fund.

KEY FUNDERS

NCE RCE

Federal Economic Development Agency for Southern Ontario

Agence fédérale de développement économique pour le Sud de l'Ontario

Ontario

FOUNDING INSTITUTIONAL MEMBERS

University of Toronto

UHN Toronto General Toronto Western Princess Margaret Toronto Rehab Michener Institute

SickKids

The Ottawa Hospital Research Institute | L'Hôpital d'Ottawa Institut de recherche

ASSOCIATE INSTITUTIONS

LUMC

McMaster University

Monash University

Mount Sinai Hospital
Sinai Health System
Joseph & Wolf Lebovic Health Complex

UBC The University of British Columbia

PORTFOLIO COMPANIES

AVROBIO

endogena

EXCELLTHERA

Feldan Therapeutics

木曽印路
KisoJi

COLLABORATIVE PARTNERS

INDUSTRY CONSORTIUM

CCRM has established a consortium of companies that represent key sectors of the regenerative medicine industry, including therapeutics, devices, reagents, and cells as tools. These companies range from multinational corporations, to small-medium enterprises, to emerging start-ups. They have been able to utilize the translational platforms developed by CCRM to enable new opportunities and address real-life bottlenecks in their businesses.

CCRM would like to acknowledge the valuable relationships that have been fostered with these companies. We believe all parties have benefited from the synergies created through the industry consortium.

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CCRM
Commercializing Living Therapies