

By Stacey Johnson

CCRM

STRATEGIC PARTNERSHIPS ARE PAYING OFF

When a mainstream Toronto magazine includes you in a list of "Reasons to LOVE Toronto Now," you know you've reached a level of recognition that extends beyond your own community and stakeholders. The Centre for Commercialization of Regenerative Medicine (CCRM) and Toronto's pioneering stem cell community are a respectable #18 on a 2012 list of 30, sandwiched between a hospital redefining its food and Toronto's inflated real estate market whose bubble has yet to burst.



Left to Right: Janet Rossant (OSCI), Peter Zandstra (CCRM), Lisa Drouillard (NCE) and Michael May (CCRM) at CCRM's launch party in 2011.

So how did CCRM end up on such a list? There is no doubt that Toronto's stem cell community is hot. It boasts world-class researchers and a long history of stem cell discovery, beginning with James Till's and Ernest McCulloch's original discovery of stem cells 50 years ago. Toronto is home to numerous institutions conducting excellent stem cell research, including Mount Sinai Hospital, the University of Toronto, The Hospital for Sick Children (included in #18) and the McEwen Centre for Regenerative Medicine (University Health Network), also named in the list.

But CCRM launched in June 2011, so it is still finding its footing compared to these venerable institutions. Why is it shoulder-to-shoulder with SickKids and the McEwen Centre when it is barely out of its first-year honeymoon period?

"CCRM is unique in Canada because our model is unique," explains Dr. Michael

May, CEO of the Centre for Commercialization of Regenerative Medicine. "We are bridging the commercialization gap between academia and industry in a way that hasn't been done before in regenerative medicine (RM)."

According to a 2009 industry report from MaRS Market Intelligence, the current global market for RM is US\$3.6 billion and conservative estimates suggest that it will exceed US\$11 billion within the decade. There is huge opportunity in this field, but commercializing R&D is an ongoing challenge in Canada.

The federal government launched the Networks of Centres of Excellence (NCE) program more than 20 years ago to "mobiliz[e] Canada's best research and development talent to build a more advanced, healthy, competitive, and prosperous Canada. In 2007, an additional \$285 million was invested to create the

Centres of Excellence for Commercialization and Research (CECR) program, led by the NCE secretariat.

According to the NCE website, "this innovative model creates centres to advance research and facilitate commercialization of technologies, products and services within the four priority areas identified in the federal Science and Technology (S&T) Strategy." One of those areas is Health and Life Sciences.

CCRM is funded under the CECR program. Similar to the Networks that thrive under the still active NCE program, but focusing more on commercialization, CECRs bring together academia, government, industry and not-for-profit organizations to take a product or technology beyond the development stage, all the way to the market.

Although CCRM is barely a year old, it has a number of significant accomplish-



CCRM scientists at work in the historic Banting Institute at the University of Toronto, CCRM's institutional host.

ments that bode well for its future. In terms of working with industry, they include: building an industry consortium of 20 plus companies that are ready to be receptors for new technologies; launching its first industry project with EMD Millipore, with 10 more projects at various stages of readiness; and, announcing the \$500,000 Pfizer-CCRM Innovation Fund to stimulate RM projects.

On the intellectual property side, CCRM has begun due diligence on 35 new inventions; commenced the creation of a company from CCRM licensed technology; and developed a drug screening consortium of international partners currently applying for various large grants.

Other milestones include securing \$3 million in new matching funds; generating revenues from the production of induced pluripotent stem cells; initiating several international collaborations; setting up a development facility with three translational platforms; and, growing from seven employees to 20 in the first year with plans for more hires in year two.

Perhaps most significantly, CCRM has developed an impressive network of RM scientists and business leaders that touches every significant person in the

global community. In Dr. May's opinion, this valuable network is essential to CCRM's success.

"Our networks are as important as the technologies that we focus on. Without the right ecosystem, technology development fails," says Dr. May.

The Ontario Stem Cell Initiative (OSCI) is the foundation of CCRM's academic network in Ontario. CCRM's institutional partners include: McMaster University, Mount Sinai Hospital, SickKids, Ottawa Hospital Research Institute, University Health Network and University of Toronto. Nationally, CCRM partners with the Stem Cell Network – one of Canada's original NCEs.

OSCI is an academic network of 70 stem cell research programs that collaborate and nurture trainees in the field. Together, they have secured 170 patents. In the last five years, OSCI researchers have received approximately \$500 million in grant funding and trained over 1,000 Highly Qualified Personnel (HQP). Dr. Janet Rossant, chief of Research at the Hospital for Sick Children, is OSCI's director and one of the most cited stem cell researchers in the world. Drawing on the scientific expertise and knowledge available at OSCI, as well as the technologies and processes avail-

able for commercializing, gives CCRM a huge advantage.

"OSCI has created an environment where collaboration is encouraged and rewarded. CCRM has incorporated collaboration into every aspect of its research and business model, so it's a perfect partnership," says Dr. Peter Zandstra, chief scientific officer of CCRM and Canada Research Chair in Stem Cell Bioengineering. "Add the fact that we are located across the street from MaRS Discovery District, Toronto's innovation and entrepreneurship hub, and a symbiotic pattern emerges."

MaRS Discovery District (DD) is home to an impressive group of research laboratories, small, medium and established global companies, venture capital firms and professional service firms. Three of CCRM's industry consortium members have offices in MaRS DD and an important institutional partner is also housed there.

MaRS Innovation (MI), also funded under the CECR program, describes itself as a "commercialization storefront" for Toronto's universities and research institutes. MI and CCRM work closely together.

MI has established relationships with the technology transfer offices in the universities and hospitals around Toronto (with one exception being a research institute in Thunder Bay) so all regenerative medicine opportunities sent to MI get disclosed to CCRM and vice versa. MI and CCRM jointly evaluate intellectual property to determine whether it should be patented and commercialized. They bring business, entrepreneurial expertise and resources to the task, along with a desire to see the regenerative medicine community thrive.

With so much support from the academic, institutional and business communities in the regenerative medicine field, CCRM appears to have found its niche.

If CCRM achieves its vision to be the premier destination for risk capital, leading industry and the best people in RM, Toronto's stem cell community may just attain that coveted #1 spot on the "Reasons to LOVE Toronto Now" list of the future. You know what they say: if you're going to dream, dream big.

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