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U of T-hosted regenerative medicine project awarded \$15 million from federal government

Focus on turning biomedical research and engineering into treatments for debilitating diseases

By [Paul Fraumeni](#), posted *Monday, December 6, 2010*

Developing products that will enable treatments for devastating health conditions such as heart disease, diabetes, cancer and spinal cord injuries is the focus of a major University of Toronto-hosted research and commercialization initiative that has been awarded \$15 million by the Government of Canada's Networks of Centres of Excellence (NCE).

The Centre for Commercialization of Regenerative Medicine (CCRM) was one of five projects approved by the NCE Dec. 6 as part of its Centres of Excellence for Commercialization and Research (CECR) competition.

The CECR program's mandate is to create internationally recognized centres of commercialization and research expertise in four priority areas in order to deliver economic, social and environmental benefits to Canadians. As established in the Government of Canada's science and technology strategy, the priority areas include: environmental science and technologies, natural resources and energy, health and related life sciences and technologies, information and communications technologies.

"Our government understands that an innovative society and economy depend on creative thinkers whose potential is encouraged and supported," said Minister of Industry Tony Clement. "That's why we are investing in the ideas, products and technologies generated by these Centres of Excellence to create jobs and businesses, help develop highly skilled people, strengthen our economy and position Canada for long-term prosperity."

The CCRM's chief scientific officer will be Professor **Peter Zandstra** of U of T's Institute of Biomaterials and Biomedical Engineering and a leading specialist in regenerative medicine. In addition to U of T, the centre includes six institutions as research partners - The Hospital for Sick Children, McMaster University, Mount Sinai Hospital, the Ottawa Hospital Research Institute and the University Health Network, as well as 16 inaugural private sector enterprises engaged in regenerative medicine.

The Ontario Government, through the Ministry of Research and Innovation, is also an important partner in CCRM and has been providing key infrastructure and research support to the stem cell and biomaterials communities.

"The partnership aspect of the CCRM is our real strength," said Zandstra, who is also Canada Research Chair in Stem Cell Bioengineering and a scientist at the University Health Network's McEwen Centre for Regenerative Medicine. "All our partner organizations, in academia and in the private sector, are conducting leading edge work in regenerative medicine that has the potential to become important products and technologies that will benefit the health and welfare of global society. Unifying this talent around core platforms to enable new technologies may lead to truly transformative advances."

Regenerative medicine is an emerging field that encompasses innovative methods - such as stem cell therapy, regenerative biomolecules, tissue engineering and the use of biomaterials - of treating disease and injury. Scientists working in RM are making important progress that holds the possibility, for example, of people with diabetes being freed from having to use daily injections of insulin or enabling those paralyzed by spinal cord injuries to walk again.

Zandstra adds that while the scientific innovation is vital, the commercialization component, which will be driven by the CCRM, is key to bringing innovations to people around the globe.

"The problem is that many new and potentially life-changing RM-based treatments never reach patients

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The problem is that many new and potentially life-changing RM-based treatments never reach patients because they are not successfully moved from the laboratory to a stage where they can be used in medicine. Our plan is twofold - to leverage our advanced biomedical research and engineering and to create an RM commercialization pipeline to get our innovations into the marketplace and to people suffering from these difficult health conditions. This is why our initiative combines the talents of academic scientists and commercialization experts. The investment and foundations we put in place over the next several years are crucial to achieving success and in ensuring that Canada is a global leader in what is becoming an important industry."

To pursue this program, the CCRM has identified three thrusts to fuel a sustainable, global RM industry based in Canada:

- CCRM will unite the significant investments from the Canadian and Ontario governments, its institutional members and its industry partners around product development platforms dedicated to enabling stem cell- and biomaterials-based technologies. These development platforms will underpin the long-term sustainability of the centre.
- CCRM will coordinate and build upon Canada's strength in stem cell and biomaterials sciences with knowledgeable and dynamic business leadership. By creating a strong business development arm, CCRM will be able to focus on playing an active role in capturing, managing and adding value to Canadian RM intellectual property.
- CCRM will engage industry partners, making CCRM a global hub of RM commercialization and attracting investment to Ontario, leading to new jobs and economic growth.

"Partnership is so important to conducting great research and the CCRM is about to prove the value of bringing universities, hospitals and private sector enterprises together," said Professor **Paul Young**, vice-president (research) at U of T. "We are sincerely thankful to the Networks of Centres of Excellence for its investment in this venture. The CCRM will have an important future impact in improving the health of people worldwide, in addition to contributing to the Canadian economy."

Also important in the development of CCRM was MaRS Innovation (MI), established in 2008 to manage research commercialization ventures for 16 universities and hospitals in Toronto.

"MaRS Innovation worked closely with the teams at U of T and the affiliated teaching hospitals to coalesce everyone's interests, create the proposal, and manage the process," said Dr. Rafi Hofstein, MI's president and CEO and a member of CCRM's board of directors. "Indeed, we're thrilled that our strategic approach to commercialization has won such a significant boost in such a short time. This is an extraordinary initiative in bundling of intellectual property. But what it really shows is the power of accretion, the fact that one plus one can equal three."

In addition to the NCE's \$15 million, partner organizations in the CCRM will contribute \$13.7 million, bringing the total funding for the project \$28,795,000. U of T's investment will come from the IBBME, the Faculty of Medicine, the Faculty of Applied Science and Engineering and central administrative sources.

The NCE was established by the federal government in 1994 with the aim of mobilizing Canada's best research and development talent to build a more advanced, healthy, competitive, and prosperous Canada. The NCE manages four national programs: Networks of Centres of Excellence (NCE); Centres of Excellence for Commercialization and Research (CECR); Business-Led Networks of Centres of Excellence (BL-NCE), and Industrial Research and Development Internships (IRDI).

provost (academic programs) (Nov 23/10)
Professor Ira Jacobs, dean,
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