Hydrogel successfully delivers stem cells to the brain and eye, restoring vision by 15%

Molly Shoichet to receive 2016 Till & McCulloch Award

October 6, 2016 (Toronto, ON) – Molly Shoichet, Canada Research Chair in Tissue Engineering at the University of Toronto, is a leader in the use of biomaterials to enhance cell delivery and to guide stem cell fate for tissue engineering, especially in the neural system. In 2015, she and her collaborators published a paper, in *Stem Cell Reports*, which demonstrated that their hyaluronic acid (HA)-based injectable hydrogel helps transplanted stem cells survive, integrate and repair damaged tissue in the brain and eye. For this work, and an impressive career building Canada's reputation at the interface of stem cells and biomaterials, Dr. Shoichet has been chosen to receive the 2016 Till & McCulloch Award in recognition of her contribution to global stem cell research.

Dr. Shoichet's paper, "A Hyaluronan-Based Injectable Hydrogel Improves the Survival and Integration of Stem Cell Progeny Following Transplantation," has been recognized as the most impactful stem cell research publication authored in Canada in the past year. The research involved taking photoreceptor cells derived from stem cells, encapsulating them in the hydrogel and injecting them into the retinas of blind mice. Vision was restored by approximately 15%.

"Dr. Shoichet, an expert in polymers to advance our understanding of drug delivery and regeneration to promote healing in the body, has made numerous significant contributions to the field of regenerative medicine," says Dr. Peter Zandstra, CSO of CCRM, Executive Director of Medicine by Design, and a member of the selection committee. "This paper demonstrates that specific interactions between the cells and HA support their survival, migration and integration in animal models of retinal degeneration. The selection committee was impressed with the paper because it offers solutions to the cell delivery problem in neural disease. Importantly, the same material also has a pro-survival effect in a separate animal model of stroke, suggesting broad potential applicability of the strategy."

"While clinical trials in humans are years away, this work is clearly moving in that direction," says Dr. Michael Rudnicki, Scientific Director of the Stem Cell Network and the 2014 Till & McCulloch Award winner. "Diseases, like age-related macular degeneration and stroke, don't yet have cures and today's medicines only slow the progression of these diseases. Stem cell-based therapies, however, have the potential to outright stop the disease progression and, in the case of blindness, reverse it."

“It is a thrill and an honour to give a lecture that salutes the incredibly important and pioneering research of Drs. Till and McCulloch,” says Dr. Molly Shoichet. “I am humbled to be receiving this award that has been won in previous years by superbly talented, internationally renowned stem cell scientists. I am very grateful and look forward to sharing our research with everyone in beautiful British Columbia.”

Dr. Shoichet will accept the award, named after Drs. James Till and Ernest McCulloch, and present a lecture entitled, *Bioengineering tissue regeneration,* during a special session at the Till & McCulloch Meetings, Canada’s premier stem cell event. The Till & McCulloch Award lecture will take place in Whistler, British Columbia, on Tuesday, October 25, 2016 at 11:15 a.m. PT at the Hilton Whistler Resort & Spa.

The Stem Cell Network established the Till & McCulloch Award in honour of Canadians Drs. James Till and Ernest McCulloch, whose pioneering work established the field of stem cell research. The Till & McCulloch Award is presented each year as part of the Till & McCulloch Meetings. The Award is given to one researcher in Canada who is nominated through a public process. The Adjudication Committee chooses the awardee based on what is determined to be the year’s most influential peer-reviewed article by a stem cell researcher based in Canada.

Additional background on the Till & McCulloch Award, and a list of previous winners, is available here.

About the Till & McCulloch Meetings
The Till & McCulloch Meetings are Canada’s premier stem cell research event. As the only conference of its kind in Canada, the Till & McCulloch Meetings provide a forum for the exchange of ideas and research among Canada’s leading stem cell scientists, clinicians, bioengineers and ethicists, as well as representatives from industry, government, health and NGO sectors from around the world. CCRM, the Stem Cell Network and the Ontario Institute for Regenerative Medicine are pleased to be co-hosting the 2016 Meetings, which will be held in Whistler, British Columbia, from October 24-26, 2016. For more information, please visit www.tillandmcculloch.ca.

About CCRM
CCRM, a Canadian not-for-profit organization funded by the Government of Canada, the Province of Ontario, and leading academic and industry partners, supports the development of regenerative medicines and associated enabling technologies, with a specific focus on cell and gene therapy. A network of researchers, leading companies, strategic investors and entrepreneurs, CCRM aims to accelerate the translation of scientific discovery into marketable products for patients with specialized teams, funding, and infrastructure. CCRM is the commercialization partner of the Ontario Institute for Regenerative Medicine and the University of Toronto’s Medicine by Design. CCRM is hosted by the University of Toronto. Visit us at ccrm.ca.

About the Stem Cell Network
The Stem Cell Network, established in 2001, brings together approximately 150 leading scientists, clinicians, engineers and ethicists from universities and hospitals across Canada. The Network supports cutting-edge projects that translate research discoveries into new and better treatments for millions of patients in Canada and around the world. Hosted by the University of Ottawa, and the Ottawa Hospital Research Institute (OHRI), the Stem Cell Network is funded by the Government of Canada. For more information on the Stem Cell Network, please visit www.stemcellnetwork.ca.

About OIRM
Building on more than 50 years of world-leading research in stem cells and regenerative medicine, the Ontario Institute for Regenerative Medicine (OIRM) was launched in 2014 with a vision to revolutionize the treatment of degenerative diseases and make Ontario a global leader in the development of stem cell-based products and therapies. More than 170 research programs at universities and institutions across the province are involved with OIRM, with additional contributions from key clinical and health charity partners and from OIRM's commercialization partner, the Centre for Commercialization of Regenerative Medicine (CCRM). OIRM is based in Toronto and was realized with investment from Ontario's Ministry of Research and Innovation. Visit www.oirm.ca.

-30-

For more information, please contact:
Stacey Johnson
Director, Communications and Marketing
647-309-1830
stacey.johnson@ccrm.ca

Cate Murray
Director, Communications & External Affairs
613-979-6174
catemurray@stemcellnetwork.ca

Lisa Willemse
Senior Communications Advisor
613-304-2108
lisa.willemse@oirm.ca