International Summer by Design Program for Science, Business, Medicine and Engineering Graduate Students in Regenerative Medicine

Advancing trainee capabilities in research techniques, clinical translation and commercialization in regenerative medicine and stem cell therapy.

Medicine by Design, in partnership with commercialization entity CCRM and the Rotman School of Management, is offering a one-month pilot program for high-performing graduate students in science, business, medicine and engineering from Toronto and internationally.

The program will be held in Toronto, Canada and Boston, USA and will begin and end this year with participation in two of the world’s leading regenerative medicine and stem cell conferences. Participating students are able to tap into expertise available at the University’s science and engineering labs and Rotman School of Management as well as affiliated hospitals and CCRM (Centre for Commercialization of Regenerative Medicine).

Participating institutions are asked to be open to hosting two to three University of Toronto students when there is a suitable opportunity in the future (within next 2-3 years) and to have them visit and work in their labs/commercialization entities/business school.

Program

Partner institutions – including Technion Israel Institute of Technology, Kyoto University, University of Tokyo, National University Singapore, Karolinska Institute and Leiden University – are being asked to select two to three top graduate students working in stem cell and regenerative medicine, interested in international collaboration and with strong communications skills from their faculties of Engineering, Medicine, and Science as well as Business School graduate students interested in health care commercialization.

Below is a draft schedule for the program (still subject to change):

- Arrival on June 12 in Boston and meet up with program organizers and University of Toronto trainee counterparts
- Participation in a one-day site visit to regenerative medicine company, incubators and health care venture firms in the Cambridge Technology Square area
- Attendance at the International Society for Stem Cell Research (ISSCR) Annual Meeting in Boston from June 14-17
- Travel to Toronto for four weeks of technical training, business workshops, scientific discussion groups, seminars and lab open houses. Topics would range from: commercialization, business strategy, and regulatory frameworks to new findings and techniques in synthetic biology and single cell genomics
- Participants would be paired with University of Toronto counterparts and would be expected to contribute to the group by presenting on current research as well as on an overview of the commercialization or clinical translation landscape in their home country.
- Attend the CCRM’s Business of Regenerative Medicine conference July 17-19 co-hosted by the Rotman School of Management and Medicine by Design as well as conference partners Harvard
Stem Cell Institute, Georgia Tech and Case Western University (ccrm.ca/regenerative-medicine-workshops)

- Depart Toronto July 20

Participants may also be able to set up specific customized learning opportunities, such as:

- Internships at CCRM
- Commercialization project with strategy faculty member at the Rotman School
- Lab work where there is an existing collaboration or relationship

Important Dates

**January to mid-February:** outreach to partner universities to present program and gain commitment

**Mid-February to mid-March:** Partner universities select two to three candidates for program and confirm funding

**March/April/May:** Medicine by Design confirms accommodation, develops workshop schedule and works with Toronto partners to identify personalized lab/internship opportunities, books Boston site visits, selects University of Toronto trainee counterparts

**April/May:** Selected graduate students research and develop presentation/teaching session to be presented to group in July

Participant Selection Criteria

- High-performing graduate students in engineering, science and medicine whose research is focused on stem cells and regenerative medicine, particularly those who are interested or engaged in multidisciplinary collaborations that combine biology with biomedical engineering, immunoengineering, or synthetic or computational biology in new ways
- High-performing graduates students involved in advancing clinical translation of regenerative medicine
- High-performing graduate students in business who are focused on commercialization and/or manufacturing issues in regenerative medicine, biotech company formation, life science regulatory frameworks or entrepreneurship
- Participants must have strong communication and interpersonal skills and be eager to share some aspect of their own expertise with the larger group
- Participants must be willing to collaborate with fellow students from home institution to develop and deliver a joint presentation while in Toronto
- Participants ideally should have a clinical translation or commercialization mindset and be motivated by a desire to create new value through their research and training
- Participants should be willing to reciprocate hosting in Toronto by being willing to act as guide and colleague if University of Toronto participants travel to their home institution for an exchange in future
Costs

Medicine by Design will cover:

- Costs associated with organizing one-day site visit in Boston
- Four half-day to full-day workshops and four discussion group session during in Toronto. This would include teaching costs, lab costs, materials, lunch and venue charges.
- Three-day Business of Regenerative Medicine conference in Toronto (program and meals)
- Accommodation stipend of CDN$1500 per participant while in Toronto

Participating students and/or their home institutions would be responsible for:

- All flights to Boston and Toronto and return
- Registration fees to attend ISSCR (www.isscr.org)
- Accommodation in Boston (July 12-17)
- Accommodation costs in Toronto after $1500 stipend is applied
- Meals, health insurance, local transport and incidentals

Medicine by Design (www.mbd.utoronto.ca)

Medicine by Design harnesses the exceptional expertise at the University of Toronto and its affiliated hospitals at the convergence of physical and life sciences, engineering, mathematics and medicine to undertake transformative research in regenerative medicine and cell therapy. It fosters unique multidisciplinary collaborations and uses engineering design principles and quantitative biological modelling to nurture innovative environments where breakthroughs emerge.

Through strategic investments and partnerships, Medicine by Design currently provides research funds to over 100 principal investigators and their trainees in Toronto and is powering Toronto's burgeoning biomedical ecosystem, strengthening Canada as a global centre for regenerative medicine and accelerating cures. Its work is possible in part due to a generous $114 million grant from the Canada First Research Excellence Fund of the Canadian government.

CCRM (ccrm.ca)

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.

Rotman School of Management (www.rotman.utoronto.ca)

The Rotman School of Management is located in the heart of Canada’s commercial and cultural capital and is part of the University of Toronto, one of the world’s top 20 research universities. The Rotman School fosters a new way to think that enables our graduates to tackle today’s global business and societal challenges.