

# SURGICAL INNOVATION GRADUATE PROGRAMS

## Effective Technologies for Better HealthCare

The Surgical Innovation programs offer Masters, Diploma, Certificate level qualifications to provide students with the professional skills training at graduate level with the team based approach necessary for surgical innovation and to develop more highly skilled surgeons, engineers and business managers in the medical sector.



Advances to address spiraling healthcare costs and a rapidly growing ageing population are needed. Surgical Innovation today is relevant to Devices, Surgeon Training, Simulation, Diagnosis, Patient & Care Pathway Tracking, Risk Reduction, Surgical planning, Tools to reduce variability in skill and

outcome, and Healing monitoring & Rehabilitation.

## You will learn:

### INNOVATION CYCLE

Identify a clinical problem; formulate and evaluate a clinical need; design and develop a prototype & financial plan and apply it clinically.

### SURGICAL INNOVATION

Experience the power and challenges of team work; interpersonal and communication skills; integrity and ethics, emotional intelligence for the success of your projects and career development.

### BUSINESS STRATEGY

Evaluate the market and business opportunities; become familiar with regulatory and IP management issues; formulate a business plan and project planning; understand the basic concepts in business development and marketing; AND pitch for funds.

### PROFESSIONAL SKILLS

Understand the clinical and healthcare environment; the flow of patients through the healthcare system; the roles and responsibilities of healthcare professionals; patient rights and ethics in patient experimentation and patient safety.



### ACCESS THE HOSPITAL AS A LEARNING ENVIRONMENT

A functioning hospital is itself a living laboratory for engineers and a best environment to stimulate innovation.



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<http://www.mcgill.ca/experimentalsurgery>

## Who should apply?

Individuals with a background in basic sciences (i.e. biosciences, biology, physics, chemistry, genetics) engineering, computer science, product design, law, business or medicine (i.e. clinical, non clinical, nursing, epidemiology, physical and occupational health) are encouraged to apply.



A cross-disciplinary team based approach to graduate training in medical device innovation.

Available as Graduate Certificate (15 Credit), Diploma (30 Credit) and Masters Degree (45 Credit). Selective participation for hospital visits only is also available, please enquire. Many courses available remotely. Possibility of internships with Greater Montreal Area based medical device companies to develop their technical and professional skills.

## You have leadership skills and thrive when faced with challenges

Surgical Innovation is unique both in the breadth of expertise required but also in the practical limitations such as regulatory/legal requirements, budget, efficacy, market, long development time, the need for preclinical and clinical data, competition, marketing and both patient and surgeon/caregiver acceptance.



### INNOVATION AT THE CUTTING EDGE

A research degree based on bedside to bench technological





“ *The Surgical Innovation Program brings together the private sector experience and skill set of a proven medtech start-up entrepreneur, Steve Arless, (recently appointed Professor in the Program) along with the medical/clinical depth and experience of McGill’s Faculty of Medicine and its healthcare professionals.... to create a fertile environment for innovation and medtech start up opportunities.*

*This program is a must for graduate students in the medical, engineering and business faculties across Montreal who are interested in the entrepreneurial world of start-ups, and to explore and learn how to bring them to reality.* ”

**STEVE ARLESS, Serial Entrepreneur, CryoCath, Montreal**

The distinctive blend of surgery , engineering and business education of the Innovation graduate will give a competitive advantage in the labour market and provide them with the basic skill sets needed to compete in a global employment, create new enterprises and positions related to research.

### BEDSIDE TO BENCH & BACK AGAIN

The Programs provide trainees with innovation, engineering, software, biology, business, medicine, all combined team skills, experience and training that will distinguish them going forward to develop needs-based clinical innovations.

### INNOVATION AT THE CUTTING EDGE

Surgery, by its reliance on manual skills, lends itself to technological innovation that can result in staggering advances in patient care.

This is a unique opportunity for graduate trainees preparing to enter the medical devices and in the surgical simulation sector.

### APPLICATION DEADLINES\*

	CAN	Start	Average Duration
<b>M.Sc.</b>	Jun 15	Sept	1½ -2 yrs
	Nov 1	Jan	2 yrs
<b>Gr Dip.</b>	Jun 15	Sept	1-1½ yr
	Nov 1	Jan	
<b>Gr Cert.</b>	Jun 15	Sept	8 mo.-1 yr

\* These deadlines are subject to change. Please visit the Prospective Students - Admission Information on the Experimental Surgery website to verify the most-to-date information.

\*\* Some regions are eligible for domestic fees .

Please note that other programs are available related to Clinical Innovation, including a PhD program.

Visit our website or contact us

for more information:

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## SURGICAL INNOVATION



## Masters, Diploma & Certificate Programs

Learn the clinical innovation process embedded in our Surgeon-Scientist-Entrepreneur innovation teams.

