

## **Simulation Fellowship.**

Duration: 1 year

Number of positions: 1/ year

Arnold and Blema Steinberg Medical Simulation Centre

McGill University Health Centre

McGill University Affiliated Hospitals

### **Type of Fellowship:**

This is a Surgical Simulation Fellowship within the Department of Surgery available to a successful candidate for 1 year. The goal of the Fellowship is to train and produce individuals with the necessary knowledge, skill and attitude to conduct independent simulation-based research and education as part of an academic career and leadership role in Surgical Education. This Fellowship is designed and aligned with the pending Surgical Simulation Fellowship of the American College of Surgeons

The fellowship is structured as to provide the candidate with non- clinical (75%) and clinical (25%) experience in Surgical Education.

### **Program Information:**

#### **Goals and Objectives**

##### **Goal**

The goal of the Fellowship is to train and produce individuals with the necessary knowledge, skill and attitude to conduct independent simulation-based research and education as part of an academic career in surgery.

##### **Objectives:**

After completion of the program, the successful candidate will be able to:

- 1) Apply principles of instructional design and adult learning to create simulation-based curricula
- 2) Understand and compare the different methods used for simulation research and be able to design, execute, and analyze projects in this field
- 3) Select appropriate simulation modalities and technology based on specific research and/or learning needs
- 4) Measure outcomes of simulation-based education by incorporating reliable and valid metrics
- 5) With mentorship, complete a research project, present and publish the findings
- 6) Understand the challenges related to the day-to-day functioning of a simulation center

##### **Candidate**

The position is open to one surgeon/year who has officially completed their specialty training.

The duration of the fellowship is one year.  
Candidates may also complete a Master's of Science in Experimental Surgery at McGill during the fellowship.

## Background and Research Activity

This fellowship will combine a non-clinical, research and education component with a clinical component within the specialty field of the candidate. The non-clinical component will comprise roughly 75% of the candidates' time with the rest of the time devoted to educational activities and educational practice within the candidates' clinical domain.

The non-clinical component will be heavily centred on the mastery of educational theory as it applies to surgical education, the understanding of educational research methodology, and the elaboration of a research project. The bulk of the non-clinical activity will take place at the Arnold and Blema Medical Simulation Centre and to a lesser extent at the Centre for Medical Education as well as the Steinberg Centre for Minimally Invasive Surgery.

The main objective of the clinical component of this fellowship is to provide the candidate with the necessary clinical exposure to put into practice the theory and principles of Surgical Education within a clinical contextual framework. In addition, a clinical context will provide the necessary material for creating a robust research project.

The candidate will have an appointed clinical supervisor appointed from the appropriate specialty Division. The candidate will be integrated into the respective surgical specialty and will rotate at the McGill University Health Centre or one of the McGill affiliated hospitals. The exact nature of the candidates' clinical work and clinical responsibilities will be agreed upon between the candidate and the clinical supervisor.

It is assumed that the candidate will participate actively in the educational activities of the Department of Surgery as well as the clinical specialty division. It is hoped that this participation will have a positive impact on resident teaching and learning and provide a role model for residents interested in surgical education.

## Research and Publications

The candidate, under close supervision from the Faculty, will be active in the development of a simulation-based research project. This project could also be used to obtain a Master's of Science in Experimental Surgery from McGill University.

A number of research domain are available to the candidate. Examples include

- novel curricular development and outcome measures
- Team Training and Team Assessment
- development of task trainers/ simulators and innovative technology

- validation studies
- performance metrics

Each Fellow will be required to have a Research Committee whose goal is to advise and support the candidate and monitor progress.

The Committee will be composed of four individuals; the Candidate, the Fellowship Director; a Research Faculty member, and a member of the Faculty of Education or a member of the Faculty of Medicine with expertise in education. The Committee will meet three times per year where the candidate will present a progress report. An evaluation of the candidate will be performed and feedback given to the Fellow

**Fellowship Program Director:** Dr. Kevin Lachapelle

## **FACULTY**

***Dr Roger Azevedo PhD***

Professor of Educational and Counseling Psychology  
Laboratory for the Study of Metacognition and Advanced Learning Technologies  
Associate Editor Metacognition and Learning.

His current research focuses on students' self-regulated learning of complex science topics with hypermedia, and contributes to the fields of cognitive and learning sciences, applied cognitive psychology, and learning technologies

***Dr Farhan Bhanji MD, M.Sc. (Ed), FRCPC***

Associate Professor of Pediatrics  
Pediatric Intensive Care and Pediatric Emergency Medicine

His Research interests include Simulation-based education and team training, optimizing the instruction of pediatric resuscitation and the use of technology enhanced instruction to improve clinical training. Kaplan Award for clinical teaching from the Pediatrics residents at McGill in 2007 and the New Educator's Award from the Canadian Association for Medical Education (CAME) in 2009.

***Linda Crelinsten R.N., M.A.***

Assistant Director, Arnold and Blema Steinberg Medical Simulation Centre  
Chair, Steering Committee, Canadian Network Simulation in Healthcare  
Executive Committee, MODSIM, Ottawa 2011

Coordinates logistics and personnel support for all research activities at the Simulation Centre.

***Dr Gerald Fried MD, FRCPS(C), FACS***

Professor of Surgery and Gastroenterology and Chairman of the Department of Surgery, McGill University

He is a practicing general surgeon, and specializes in minimally invasive surgical therapies, especially as applied to treatment of digestive disorders. He founded the Steinberg-Bernstein Centre for Minimally Invasive Surgery and Innovation at the McGill University Health Centre to coordinate the clinical, research and education activities related to innovative and endoscopic therapies for GI disease. He has previously served as Adair Family Chair of Surgical Education, Program Director for General Surgery, Royal College Examiner for General Surgery, and serves on the Committee of Emerging Surgical Technology and Education of the American College of Surgeons. He has been named to the Faculty Honour List for Educational Excellence of the McGill Faculty of Medicine, and has received the John Ruedy Award for Innovation in Education from the Association of Canadian Faculties of Medicine..

His research interests include simulation training and evaluation methods specifically applied to acquisition of novel technical skills in surgery.

***Dr Liane Feldman*** MD, FRCPS(C), FACS

Associate Professor of Surgery, McGill University

Chief, Division of General Surgery, McGill University and MUHC

Steinberg-Bernstein Chair of Minimally Invasive Surgery at the MUHC.

Director of the General Surgery Clinical Teaching Unit

Director of the Minimally Invasive Surgery (MIS) Fellowship Program

Among her many accomplishments, Dr. Feldman represented Canada as the James IV Travelling Surgeon in 2010, received the Canadian Association for Medical Education National Award for “distinguished contribution to medical education,” chairs the Canadian Association of General Surgeons Committee on Laparoscopy and Endoscopy, and serves on the ACS Committee on Emerging Surgical Technologies and Education. She was an invited member of the Colloquia at Balliol College, Oxford on evaluation of surgical innovation, published in The Lancet.

***Dr Kevin Lachapelle*** MD, FRCPS(C), FACS

Associate Professor of Surgery, McGill University

Adair Chair in Surgical Education

Cardiac Surgeon, MUHC

Director, Arnold and Blema Steinberg Medical Simulation Centre

Director, Cardiac Surgery Training Program

He founded the McGill Medical Simulation Centre, a multidisciplinary and interprofessional simulation-based education institute which serves the Faculty of Medicine, McGill University and its affiliated hospitals. He is a recipient of the

Faculty Honour List for educational Excellence and the John Reudy award for Innovation in Medical Education from the Faculties of Medicine in Canada

His research Interests include validation of open surgical models, multi-angle viewing for learning and teaching, and team performance as it pertains to leadership and shared-mental models.

### **Academic Facilities**

The Arnold and Blema Steinberg Medical Simulation Centre is a 20 000 square foot Simulation Centre. It is a multi modal and inter-professional unit and provides simulation-based education, training and evaluation for the Faculty of Medicine, McGill University.

Opened in 2006, the Centre is a level 1 Accredited Education Institute of the American College of Surgeons (2009, 2013) as well as being accredited by the Society for Simulation in HealthCare (2010), and the Royal College of Physicians and Surgeons of Canada (2010).

The Centre for Medical Education is an educational unit specializing in educational scholarship and research. A number of Fellowship Faculty have cross appointments at both Units.

### **Fellow Duties and Responsibilities**

The successful candidate will become immersed in simulation-based education and participate fully in the educational and research activities of the Simulation Centre.

The design, development, and implantation of a scholarly research project will be a major focus of the fellowship.

In addition, the Fellow will acquire hands on expertise in the design and development and evaluation of curriculum for undergraduate, post graduate and CME simulation-based education. The fellow will also learn how to integrate task trainers, standardized patients, virtual reality trainers, and high-fidelity simulation into a curriculum.

The fellow will also learn how to manage and administrate a large and busy simulation practice.

Specifically, the Fellow will be required to attend and participate in simulation quarterly Faculty Development Workshops, monthly Research Committee meetings, weekly staff meetings, weekly Centre for Med Ed meetings, weekly research meetings, and other educational activities within the University.

The level of clinical responsibility will be in line with other clinical fellows but the time commitment will be much reduced.

It is anticipated that the Fellow will devote one day a week towards clinical activities. This clinical will be determined by the Clinical Supervisor and the Fellow. It is also assumed that the Fellow will participate in the on call schedule and will have occasional clinical responsibilities on weekends. The Fellow will also participate actively and assume an important role within the academic teaching of the Clinical Service

## **CURRICULUM**

The curriculum ensures a broad exposure to surgical simulation and includes principles of adult education, instructional design, educational research, simulation research design and implementation. This is achieved through various instructional methods; formal course work, rounds, lectures, presentations, conferences, visiting professors, and field work.

### *1) Courses*

EXSU 601 (6) Knowledge Management (spanning Fall and Winter term)  
EXSU 606 (3) Statistics for Surgical Research (Fall term)  
EXSU 605 (3) Innovations in Biomedical Research (Winter term)

A 500 level course in the Faculty of Education is also mandatory. Selection of the former and of additional courses, if required, will be in consultation with the Research Supervisory Committee appointed to each student.

### *2) Rounds*

There are a number of rounds pertaining to education, educational research, and simulation.

Simulation Rounds: Monthly seminars on simulation-based medical education

Medical Education Rounds: Monthly lectures on medical education topics

Centre for Medical Education Meetings: Weekly presentations by staff, residents and fellows from across the Faculty of Medicine

### *3) Research Meetings and Development*

Biweekly meetings of all students, residents, fellows and Faculty in the Department of Surgery involved in surgical simulation research.

### *4) Faculty Seminar*

Small group session given once a month by Faculty to Fellow and other interested participants on topics of educational research.

### *5) Conferences*

Fellows are expected to attend at least two conferences per year pertaining to surgical simulation

American College of Surgeons  
SAGES  
Society for Simulation in Healthcare  
Simulation Summit

*6) Research and Field Work*

The largest component of training is the hands-on experience related to design, methodology, execution, analysis, and interpretation of data.

The completion of a thesis is encouraged and is mandatory for those enrolled in the Msc program