

Canadian Spine Society/ University of Toronto Spine Program

# SURGICAL SKILLS COURSE

Utilizing Navigation to Optimize Outcomes

Saturday March 2, 2019 | 12:45 – 6:30 PM

Main Mezzanine Floor

Rooms: Territories, British Columbia, Algonquin  
Fairmont Hotel- Toronto | 100 Front St.

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**FREE REGISTRATION**  
RSVP to Nadia Jaber at  
[uoft.spine@utoronto.ca](mailto:uoft.spine@utoronto.ca)



## TARGET AUDIENCE

This course is aimed at a broad audience, including spine trainees as well as established spine surgeons. Through the use of incremental learning goals, case-based presentation will help cover basic concepts for trainees, while providing challenges and controversies to help stimulate conversation amongst more experienced participants.

## COURSE DESCRIPTION

This short course will focus on providing participants with real-life case-based examples as well as the ability to interact with navigation equipment from a variety of vendors. Participants will be asked to “badge in” based on their training levels:

- Red for Residents
- Yellow for Fellows
- Green for Staff

Throughout the case presentations and discussions, learning goals will be colour coded to ensure that each participant can focus on the learning goals most pertinent to them.

## COURSE GOALS

- Provide participants with clinical cases reflecting common clinical challenges encountered in everyday practice
- Layer learning objectives to address a variety of experience from course participants
- Provide participants with the ability to have hands on experience with a variety of navigation systems.

## AGENDA *(Rooms: Territories, British Colombia, Algonquin)*

|            |  |  |
|------------|--|--|
| 12:45      | Lunch <i>(Foyer)</i>                                       |  |
| 12:45-1:35 | Introduction <i>Territories</i>                            |  |
| 1:15       | Introductory Remarks from the UofT Spine Program           | Dr. Fehlings & Dr. Yee, Co-Directors, UofT Spine Program |
| 1:25       | Introduction to the course                                 | Dr. Massicotte   |
| 1:35       | “Perspectives on Spine Surgeon Training”                   | Dr. Paquette   |
| 1:45       | First Rotation: ½ in <i>BC</i> and ½ in <i>Algonquin</i>   | Drs. Larouche & Wilson                                   |
| 2:30       | Break <i>(foyer)</i> – Change rooms                        |  |
| 2:45       | Second Rotation ½ in <i>BC</i> and ½ in <i>Algonquin</i>   | Drs. Larouche & Wilson                                   |
| 3:30       | Break <i>(foyer)</i> – reconvene                           |  |
| 3:45       | Navigation Review and hands on training <i>Territories</i> | Dr. Massicotte   |
| 4:30       | Case conclusion <i>Territories</i>                         | Drs. Massicotte, Wilson & Larouche                       |
| 5:30       | Wrap up <i>Territories</i>                                 | Drs. Massicotte, Wilson & Larouche                       |
| 5:35-6:30  | <i>Wine and Cheese (foyer/BC)</i>                          |  |

## STATIONS

### STATION I: DR. JEFF WILSON - CERVICAL SPINE

#### *Case 1: Spinal trauma*

**Resident Learning Goal:**

To describe the key principles surrounding diagnosis and management of spine trauma and spinal cord injury

**Fellow Learning Goal:**

To describe in detail the relative merits of different treatment approaches for spine trauma and spinal cord injury.

**Staff Learning Goal:**

To describe an increasingly nuanced approach toward the management of spine trauma and spinal cord injury depending on the characteristics of the patient involved.

#### *Case 2: Cervical Myelopathy*

**Resident Learning Goal:**

To understand the key principles in the diagnosis and management of cervical myelopathy

**Fellow Learning Goal:**

To describe in detail the relative merits of different treatment approaches for cervical myelopathy

**Staff Learning Goal:**

To develop increased awareness around recently published cervical myelopathy clinical practice guidelines and to fortify approach to the mild/minimally symptomatic patient.

### STATION II DR. JEREMIE LAROUCHE - THORACOLUMBAR SPINE

#### *Case 1: Post traumatic deformity*

**Resident Learning Goal:**

Understand the principle of sagittal spine balance and its relationship to pelvic incident.

**Fellow Learning Goal:**

Understand the altered gait kinematics associated with spinopelvic mismatch, and the physical examination finding in patients with positive sagittal balance.

**Staff Learning Goal:**

Understand treatment options and potential complications associated with each sagittal balance correction.

#### *Case 2: Thoracic Metastatic Tumor*

**Resident Learning Goal:**

Understand staging systems used to assess mechanical stability, neurological compromise, and systemic wellness of patients (NOMS framework)

**Fellow Learning Goal:**

Discuss role of stabilization, decompression, and separation surgery in patients with metastatic epidural spinal cord compression (MESCC)

**Staff Learning Goal:**

Review treatment options for patients with pathological fractures/impending pathological fractures and MESCC.

**STATION III: DR. ERIC MASSICOTTE - OVERVIEW OF NAVIGATION PEARLS AND PITFALLS**

**Resident Learning Goal**

To gain better understanding of surgical anatomy with the use of the Navigation as a tool. Use of the cases in both interactive case-based discussion will be used to outline basic anatomical and biomechanical principles for the novice learner.

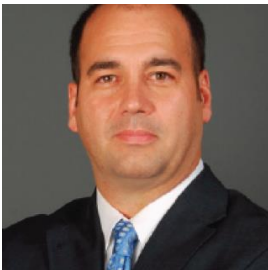
**Fellow Learning Goal**

Advanced learning by incorporating the use of surgical navigation. Overview of the optimal use and pitfalls for surgical navigation.

**Staff Learning Goal**

Better understanding of the different systems and their relative strengths and weaknesses.

**FACULTY**



**Eric Massicotte MD, MSc, FRCS(C)**  
Associate Professor, Neurosurgery  
Department of Surgery  
U of T Spine Program  
University of Toronto

A graduate of the University of Ottawa School of Medicine in 1995, Dr. Massicotte entered the Neurosurgical Training Program at the University of Manitoba immediately after. He transitioned to the University of Toronto for his senior years. During his time in Manitoba Dr. Massicotte completed a Master in Science with the department of surgery. His research focused on white matter changes in the rat model under the supervision of Dr. Marc Del Bigio. He became a Fellow of the Royal College of Physicians and Surgeons of Canada in 2001. In order to further his interest in spine he undertook a fellowship at the Toronto Western Hospital under the direction of Dr. Fehlings. The complex spine fellowship also provided him time with Dr. Lewis and Dr. Rampersaud.

He is now Associate Professor in the Department of Surgery, and member of the Division of Neurosurgery at the Toronto Western Hospital. His clinical practice focuses on spine with research interests in outcome measures and medical education. Dr. Massicotte has been appointed medical director for two programs at Altum Health, Back & Neck and Concussion. The latter was an innovation started in collaboration with Dr. Charles Tator.



**Jefferson Wilson MD, PhD, FRCS(C)**

Staff Neurosurgeon, St Michael's Hospital  
Assistant Professor, Neurosurgery  
Department of Surgery  
U of T Spine Program  
University of Toronto

Jeff entered the neurosurgery program at University of Toronto after completing his MD at the University of Saskatchewan in 2007. During residency he earned a PhD through IMS and the Surgeon Scientist Program under the mentorship of Michael Fehlings and Abhaya Kulkarni with his research focused on the epidemiology and clinical epidemiology of traumatic spinal cord injury. Jeff's research has been funded by multiple grants from the Christopher and Dana Reeve Foundation, Cervical Spine Research Society and the Ontario Neurotrauma Foundation; further, he has been the recipient of numerous prestigious awards including: the K.G. McKenzie Prize from the Canadian Federation of Neurological Sciences, the Synthes Spinal Cord Injury Award from the American Association of Neurological Surgeon and the Shafie S. Fazel Outstanding Resident Surgeon and Investigator Award from the U of T Department of Surgery. After obtaining his FRCS(C) in neurosurgery in 2015, Jeff undertook a combined neurosurgery orthopedic fellowship in complex spine surgery at Thomas Jefferson University in Philadelphia, PA under the mentorship of James Harrop and Alex Vaccaro. Jeff returns to Toronto as a Surgeon Scientist at St. Michael's Hospital with clinical focus on the full spectrum of spinal disorders. From a research perspective, he is primarily interested in topics related to the epidemiology and clinical epidemiology of spinal trauma and spinal cord injury. Currently he serves as the Deputy Editor of the journal Clinical Spine Surgery



**Jeremie Larouche MD, MSc**

Staff Orthopedic Surgeon  
Sunnybrook Health Sciences Centre

Dr Larouche is Orthopedic Trauma and Spine Surgeon at Sunnybrook Health Sciences Centre  
Dr. Jeremie Larouche first completed a fellowship in Orthopaedic Trauma at the University of British Columbia, before returning to Toronto to complete a Spine surgery fellowship at Sunnybrook Health Sciences Centre.

Dr. Larouche began his academic career at the University of California San Francisco, where he was hired as an Assistant Professor of Clinical Orthopaedics. There, he worked at the Zuckerberg San Francisco General Hospital & Trauma Center, where he specialized in providing care to poly-traumatized patients with complex orthopaedic and spine injuries.

Dr. Larouche is now working out of Sunnybrook Health Sciences Centre. He is recently completed a Master of Science degree in Quality Improvement and Patient Safety. His clinical interest focuses on orthopaedic trauma, spine trauma, and spinal oncology.



**Michael Fehlings MD PhD FRCS FACS**

Professor of Neurosurgery  
Vice Chair Research, Department of Surgery  
Gerry and Tootsie Halbert Chair in Neural Repair and Regeneration Co-Director, Spine Program  
McLaughlin Scholar in Molecular Medicine  
University of Toronto

Head, Spinal Program  
Senior Scientist, Toronto Western Research Institute Scientist  
McEwen Centre for Regenerative Medicine  
Toronto Western Hospital, University Health Network

Dr. Fehlings is the Vice Chair Research for the Department of Surgery at the University of Toronto and Head of the Spinal Program at Toronto Western Hospital, University Health Network. Dr. Fehlings is a Professor of Neurosurgery at the University of Toronto, holds the Gerry and Tootsie Halbert Chair in Neural Repair and Regeneration, is a Scientist at the McEwen Centre for Regenerative Medicine and a McLaughlin Scholar in Molecular Medicine. In the fall of 2008, Dr. Fehlings was appointed the inaugural Director of the University of Toronto Neuroscience Program (which he held until June 2012) and Co-Director of the newly formed University of Toronto Spine Program.

Dr. Fehlings combines an active clinical practice in complex spinal surgery with a translationally oriented research program focused on discovering novel treatments for the injured brain and spinal cord. This is reflected by the publication of over 800 peer-reviewed articles (h-index 81) chiefly in the area of central nervous system injury and complex spinal surgery. Dr. Fehlings leads a multi-disciplinary team of researchers which is examining the application of stem cells, nanotechnology and tissue engineering for CNS repair and regeneration. He is also a principal investigator in the Christopher and Dana Reeve Foundation North American Clinical Trials Network, chair of the internationally renowned AOSpine North America network and leads several international clinical research trials.

Dr. Fehlings has received numerous prestigious awards including the Gold Medal in Surgery from the Royal College of Physicians and Surgeons (1996), nomination to the Who's Who list of the 1000 most influential scientists of the 21st century (2001), the Lister Award in Surgical Research (2006), the Leon Wiltse Award from the North American Spine Society for excellence in leadership and/or clinical research in spine care (2009), the Olivecrona Award (2009) -- the top award internationally for neurosurgeons and neuroscientists awarded by the Nobel Institute at the Karolinska Institute in Stockholm for his important contributions in CNS injury repair and regeneration, the Reeve-Irvine Research Medal in Spinal Cord Injury (2012), the Golden Axon Leadership Award (2012), the Mac Keith Basic Science Lectureship Award for significant contributions to the basic science of cerebral palsy and childhood onset disabilities (2012), and was the Mayfield Lecturer (2012). In 2012, Dr. Fehlings served as the 40th President of the Cervical Spine Research Society (CSRS) -- the only Canadian to do so -- and was honoured with the CSRS Presidential Medallion for outstanding leadership and contributions to cervical spine research. In 2013, Dr. Fehlings was honoured with the Queen Elizabeth II Diamond Jubilee Medal presented to him by the Honourable Stephen Harper, the H. Richard Winn Prize from the Society of Neurological Surgeons, the Jonas Salk Award for Scientific Achievements from the March of Dimes



of Neurological Surgeons, the Jonas Salk Award for Scientific Achievements from the March of Dimes Canada and the Henry Farfan Award from the North American Spine Society. In 2014, Dr. Fehlings was elected to the Fellowship of the Royal Society of Canada and to the Canadian Academy of Health Sciences, and in 2016 won the Royal College of Physicians and Surgeons Mentor of the Year Award.

Dr. Fehlings is active in many medical societies and journal editorial boards including Journal of Neurosurgery: Spine (Past-Chairman Editorial Board), Neurosurgery (Associate Editor) and Spine where he holds the position of Deputy Editor.



**Albert Yee MD MSc FRCS C DABOS**

Professor of Orthopaedic Surgery  
Vice-Chair Research, Division of Orthopaedic Surgery  
Department of Surgery  
Co-Director Spine Program  
University of Toronto

Holland Bone and Joint Chief  
Marvin Tile Chair Division of Orthopaedic Surgery  
Sunnybrook Health Sciences Centre

Dr. Albert Yee is the Holland Bone and Joint Program Chief and the Head of the Division of Orthopaedic Surgery at Sunnybrook Health Sciences Centre, where he holds the Marvin Tile Chair in Orthopaedic Surgery. Dr. Yee is an Orthopaedic Spine Surgeon at Sunnybrook Health Sciences Centre, an Associate Scientist (Physical Sciences Platform) at Sunnybrook Research Institute and a Consultant in Surgical Oncology, Bone Metastasis Clinic, Odette Cancer Centre. He is a Full Professor at the University of Toronto in the Institute of Medical Sciences with a cross appointment in the Institute of Biomaterials and Biomedical Engineering. He is the Vice Chair of Research in the Division of Orthopaedic Surgery and Co-Director of the University of Toronto's Department of Surgery Spine Program. Dr. Yee is the Past President of the Canadian Orthopaedic Research Society, President-Elect of the Canadian Spine Society and Co-Chair of Bone & Joint Canada. He is the Canadian Lead for the Young Investigators Initiative (YII) of Bone & Joint Canada, and the US Bone & Joint Initiative, a grant mentorship and career development program. Dr. Yee has over 100 peer reviewed publications and has received academic honours including the American British Canadian (ABC) International Travelling Fellowship (American Orthopaedic Association / Canadian Orthopaedic Association, 2013), the Charles H. Tator Surgeon-Scientist Mentoring Award (2012), and the Canadian Orthopaedic Foundation J. Edouard Samson Award (2011). Dr. Yee's laboratory focuses on translational orthopaedic research utilizing pre-clinical surgical models to evaluate novel minimally invasive vertebral metastatic therapies (e.g. Photodynamic Therapy, Radiofrequency Ablation). His work has led to first in human clinical trials and FDA approval with commercialization of new minimally invasive spine technology. He has interest in understanding mechanisms of disease in cancer invasiveness to bone with an aim towards identifying potential new promising therapeutic targets.



**Scott Paquette BScH BMedSc MEd MD FRCS**

Neurosurgeon  
Clinical Assistant Professor  
Combined Neurosurgical and Orthopedic Spine Program Vancouver  
General Hospital University of British Columbia

Blusson Spinal Cord Centre  
Vancouver, BC

Dr. Scott Paquette completed his neurosurgery training in Ottawa prior to a fellowship overseas in Melbourne, Australia. He returned to Canada in 2004 to join the Division of Spine at Vancouver General Hospital. His practice is confined to adult spine surgery, with special interest in degenerative disease, trauma, intradural pathology, and spasticity.

Dr. Paquette has a particular interest in surgical education. He holds a Masters of Adult Education and sits on the resident education committees for both Neurosurgery and Orthopaedics at UBC and is a co-director of the Vancouver Spine Fellowship program. He is currently the Education Chair of the Canadian Spine Society and is working towards the development of a national spine fellowship program.

In addition to his work in Vancouver, Dr. Scott Paquette has an interest in international spine education; he is particularly interested in a project in Nepal to support and guide the training of a spinal neurosurgeon and a spinal cord medicine physician.

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