# INVERSITYS DIDE PROBLEM 1 Supplied TORONTO DIDE PROBLEM 1 Sociences 10 Page 1 Spring 2016 Volume 1 Issue1

MESSAGE from the CO-DIRECTORS

**SAVE the DATE** 

Welcome to the U of T Department of Surgery Spine Program newsletter!

With this inaugural edition, we celebrate the opportunity to highlight some of the ongoing academic activities of the program, as well as upcoming events of spinal interest both within and outside the Program. In this edition, we





highlight our young surgeon and new faculty member Dr Mohammed Shamji, and our clinical spine fellow Dr So Kato from Japan. We also highlight our recent Canadian Spine Society Annual Meeting and congratulate our research trainee Drs Allan Martin and Lindsay Tetreault for winning best paper awards. You will enjoy what our clinical trainees have to say about their experience here in Toronto as Dr Kachinga Sichizia from Zambia offers comparison about health care in Toronto and his home country, and Dr Hamed Reihani Kermani from Iran provides rather poetic reflection on his observership and on Toronto.

As you know, the U of T Department of Spine Program is fortunate to benefit from a robust academic calendar of events. We were privileged on April 4th to have Dr John Kostuik MD. former U of T Department of Surgery faculty member, as our visiting professor and speak at our Hospital-based visiting Professorship. Dr Kostuik is co-founder of the K2M, founder of the North American Spine Society and recognized leader in orthopedic surgery, leading teacher, surgeon and authority on spinal disorder. Dr Kostuik is known for his formidable leadership and reputation within the global spine surgery community, medical expertise and industry knowledge. In our morning rounds Dr Kostuik captivated the audience as he talked about how history of the treatment of spinal disorders have evolved from very early Grecian and Hindu times through to today's complex techniques. We also enjoyed Dr Kostuik's talk at the U of T GTA Spine Rounds, organized by Dr Joel Finkelstein, as he shared his journey from academic surgery to business and the development of K2M.

#### SpineFEST

Host site: U of T Spine Program

Co-Chairs: Professor Michael Fehlings & Professor Albert Yee Keynote Speaker: Professor Daniel Riew MD, Columbia University Medical Center - New York

Talk: The Post-operative Patient with Persistent or Recurrent Symptoms

Time: Monday June 13 2016. Keynote address 8:00am-9:15am. Full day Program 7:00am-4:00pm

Location: MaRS Center-Lower Concourse, 101 College Street Toronto ON

## U of T- GTA Spine Rounds & Spine Fellow Graduation

Host site: U of T Spine Program/Sunnybrook Health Sciences Centre

Organized by: Dr Joel Finkelstein- Sunnybrook Health Sciences Centre

Invited Speaker: Professor Daniel Riew MD , Columbia University Medical Center – New York

Talk: Are We Too Overspecialized?

Time: Monday June 13 2016 @ 6:30pm (by invitation)



#### MESSAGE from the CO-DIRECTORS. con't

The audience was fascinated by his expertise in product development pathways, intellectual property, patents, ethics, laws and regulations and most importantly by his advice on life.

We look forward to welcoming Professor Daniel Riew MD from New York as our keynote speaker for SpineFEST this year on Monday, June 13, 2016 at MaRS building. Dr Riew is professor of Orthopaedic Surgery, Co-Chief of Spine Division, and Director of Cervical spine Surgery at Columbia Medical Center. Dr Riew's practice is exclusively limited to the operative treatment of the cervical spine, a rarity among spine surgeons. He has a particular interest in Cervical artificial disc replacements and other motion-sparing procedures such as laminoplasties.

On January 25th, we had our citywide spine Fellow Journal Club in which our spine fellows along with team lead Dr Mark Pahuta provided reviews of the latest key articles on metastatic spine disease. The evening was in combination with citywide Spine Research Update Meeting organized by Drs Carlo Ammendolia and Karl Zabjek. In this meeting the spine fellows and post doc provided a breadth of multidisciplinary research including non-operative management, clinical outcomes, spinal cord injury, spine oncology and other areas.

The Program offers an annual Mini-FRCS Exam Prep Course co-chaired by Albert Yee and Michael Fehlings to prep our senior residents, who sit the RC exam this year, on spine disorder. The course was conducted on March 29th and rated excellent for the format and cases provided, teaching, and quizzes. We thank our teaching fellows, Mark Kotter, Markian Pahuta, Kevin Koo, Mohammad Zarrabian for making this course a great success.

Chaired by Dr Stephen Lewis, the Program also offers each year Spine Surgical Skills Courses for our new citywide spine fellows. The residents also are trained each year on surgical skills; the course is chaired by Dr Eric Massicotte.

We are excited about this newsletter and we welcome articles by faculty and trainees, both within and outside the program, that would be of interest from an academic spine perspective. These articles can be in the form of interesting clinical case presentations or case reports, an overview of ongoing spine research, ongoing clinical trials, clinical issues of importance in spine care, or highlights of recent experiences at scientific meetings and/or announcements of upcoming key events of interest.

We thank Ms Nadia Jaber for her expert help in organizing and disseminating this newsletter which we aim to have several editions annually. We thank the program council and research committee for their time and assistance in reviewing abstracts submitted for the June 2016 SpineFEST meeting. We look forward towards finalizing the program for the day and circulating the same. We are also excited about a productive Strategic Planning Meeting which will take place on Friday Sep 30th at the Krembil Discovery Tower.

Best wishes,

Michael & Albert



From left: J Kostuik, M Fehlings, A Yee, J Rutka

## UOFT SPINE PROGRAM HOSPITAL-BASED VISITING PROFESSORSHIP



BMO Education & Conference Centre Krembil Discovery Tower Toronto Western Hospital Monday April 4, 2016 7:30 AM - 8:30 AM







#### **SAVE the DATE** con't

Right: senior resident David Cadotte quizzed at mini RC exam prep course

Tator-Turnbull Spinal Cord Injury Symposium
Host site: U of T Spine Program/UHN- Toronto Western Hospital

Organized by: Professor Michael Fehlings Keynote Speaker: Professor Claes Hultling- Karolinska Institute-Stockholm

Talk: TBD

Time: Friday, November 18, 2016. Full day program TBD Location: BMO Centre, 60 Leonard Ave. Krembil Discovery Tower



Charles Tator at Tator-Turnbull SCI Symposium





## **SPINE Societies** comming to **Toronto**

## Scoliosis Research Society (SRS) Travelling Fellows

Host sites: U of T Spine Program and affiliated hospitals TWH, SHSC, HSC

Host: Drs Michael Fehlings (TWH), Stephen Lewis (TWH, HSC), and Reinhard Zeller (HSC)

Visit: June 26-30, 2016

#### The Cervical Spine Research Society (CSRS)

Host sites: U of T Spine Program & Tourism Toronto Local Host Dr Michael Fehlings- Toronto Western Hospital

Visit: Nov 30 - Dec 1, 2016

Location: The Westin Harbour Castle

## International Neurotrauma Society (INTS) Symposium

Co-Host sites: U of T Spine Program & Tourism Toronto Local Host: Dr Michael Fehlings- Toronto Western Hospital

Visit: August 2018

#### Global Spine Congress

Co-Host sites: U of T Spine Program & Tourism Toronto Local Host: Dr Michael Fehlings- Toronto Western Hospital

Visit: May 2019



SOCIETY



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## PROGRAM upcoming Internal meetings

## Program Research Committee & Program Council Meeting

Date/Time: Tue Apr 26, 2016 @ 6:00pm

Location: Stewart Building

## Program Education Committee & Program Council Meeting

Date/Time: Tue Jun 21, 2016 @ 5:30pm

Location: Stewart Building

## Program Research Committee & Program Council Meeting

Date/Time: Tue Sep 13, 2016 @ 5:30pm

Location: Stewart Building

#### Program Strategic Planning Retreat

Date/Time: Tue Sep 30, 2016. Ful day

Location: BMO Centre, 60 Leonard Ave. Krembil Discovery Tower

#### U of T Spine Program

Henry Ahn MD PhD Carlo Ammendolia DC PhD CCRF Margarete Akens Dr med vet PhD Leodante da Costa MD MSc James Drake BSE MB BCh MSc FRCSC W Mark Erwin PhD DC Mahmood Fazl MD FRCSC Michael G Fehlings MD PhD FRCSC FACS FCAHS FRSC Peter Ferguson MD MSc FRCSC Joel Finkelstein MD MSc FRCS(C) Michael H Ford MD FRCSC Howard Ginsberg MD PhD FRCSC Sukhvinder Kalsi-Ryan PT PhD Rita Kandel MD FRCPC Stephen Lewis MD Andres Lozano MD PhD FRCSC FRSC FCAHS

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## Annual Fellow Surgical Skills Course for Citywide Spine Fellows

Chair: Associate Professor Stephen Lewis

Time: Tue Aug 9, 2016. Full day



Stephen Lewis and citywide spine fellows in Surgical Skills Course



Michael Fehlings and senior ortho and neuro residents in Mini- RC Exam Prep Course



# Annual Welcome Dinner for New Citywide Fellows 2016/17

Host: U of T Spine Program

Date/Time: Tue Aug 9, 2016 @ 6pm (by invitation)

#### Citywide Reserach Update Meeting

Host: U of T Spine Program

Organized by: Assistant Professor Carlo Ammendolia and

Assistant Professor Karl Zabjek Time: Fall 2016 @ TBD

#### Citywide Spine Fellow Journal Club

Host: U of T Spine Program

Organized by: Professor Michael Fehlings & Professor

Albert Yee

Time: Fall 2016 @ 6pm



Carlo Ammendolia (right) and So Kato in Research Update
Meeting



#### our spine FACULTY

#### Assistant Professor Mohammed Shamji



After completion of a BSc/MSc degree at Yale University in 1999 and medical school at Queen's University in 2003, Dr Shamji entered the neurosurgery residency program at the University of Ottawa. During his residency, he obtained a PhD in biomedical engineering at Duke University in the area of thermally responsive biopolymers for drug delivery to inflammato-

ry pathology. In 2011, Dr Shamji became a Fellow of the Royal College of Physicians and Surgeons of Canada and began one year of adult combined spine surgery fellowship training at the University of Calgary. In 2012, he was recruited to the Faculty of the Division of Neurosurgery at Toronto Western Hospital as a Surgeon-Scientist and staff neurosurgeon and was appointed as an Assistant Professor of Surgery at The University of Toronto. His research is focused on defining the cellular and molecular mechanisms of spine-mediated neuropathic pain.

He has earned a number of awards for his clinical and basic science research, most recently in 2015 the Overall Top Paper Award at the Canadian Spine Society and Top Pain Research Award at the Congress of Neurological Surgeons. His neuromodulation clinical work was featured on CTV in mid-2015 and the bulk of his practice remains minimally-invasive and complex spinal surgery.



Shamji with residents in the Annual Resident Spine Surgical Skills Course

#### Congratulations to:

Our spine faculty members **Dr Carlo Ammendolia** for receiving the 2015 OCA Award of Chiropractor of the Year and **Dr Mark Erwin** as Researcher of the Year.

#### our spine TRAINEES

#### Spine Fellow So Kato-Japan



So graduated from the medical school at the University of Tokyo, Japan. After two years of internship, he started his orthopaedic residency program at the University of Tokyo. Following years of training at several affiliated hospitals, he rejoined the university as a spine fellow and then was appointed as assistant professor.

In 2014, So moved to Canada to join the U of T Spine program in his pediatric spine fellowship at Hospital for Sick Children (SickKids) where he received an intensive training of spinal deformity by Dr Reinhard Zeller and Dr Stephen Lewis. He is currently in his second year fellowship at Toronto Western Hospital under the supervision of Drs. Michael Fehlings, Stephen Lewis, Eric Massicotte, Raja Rampersaud, and Mohammed Shamji.

So is also involved in research work and currently participating in multiple ongoing projects. His main areas of interest are spinal deformity, cervical myelopathy and spinal metastasis. One of his studies from SickKids won the best poster award in SpineFEST 2015 (Kato S, Debaud C, Zeller R. 3-dimensional EOS analysis of apical vertebral rotation in adolescent idiopathic scoliosis. J Pediatr Orthop 2016.). He has also published several papers about cervical myelopathy (Kato S, Oshima Y, Oka H, et al. Comparison of the Japanese Orthopaedic Association (JOA) score and modified JOA (mJOA) score for the assessment of cervical myelopathy: A multicenter observational study. PLoS One 2015;10(4):e0123022.).

#### our spine TRAINEES con't

#### Congratulations to:

Allan Martin BASc MD for winning the Canadian Spine Society 2016 Meeting Best Resident Paper Award for his study entitled: "Next-Generation MRI Identifies Tract-Specific Injury And Predicts Focal Neurological Deficits in Degenerative Cervical Myelopathy: Development and Characterization of Accurate Imaging Biomarkers for Spinal Cord Pathologies". This research involves a prospective longitudinal study of 60 patients with degenerative cervical myelopathy (DCM) and 32 healthy controls. The study has found that microstructural MRI measures correlate well will overall disability (mJOA) and also that data extracted from individual white matter tracts correlates well with focal neurological deficits. This study will determine if these techniques can provide improved diagnostic tools, accurate monitoring of disease progression and recovery, and prediction of outcomes in DCM, which may also be useful in traumatic spinal cord injury (SCI).

#### Spine Resident Allan Martin



Allan is a PGY4 Neurosurgery Resident currently enrolled in the Institute of Medical Science PhD program under Dr. Michael Fehlings. His research focus is in microstructural spinal cord MRI techniques to quantify tissue injury, but Allan is also involved in several other clinical research projects including a pilot study of deep brain stimulation (DBS) to improve locomotion in

patients with chronic spinal cord injury. He originally trained in Engineering Science and worked for IBM Canada for almost 10 years, achieving 9 patents as inventor. Allan spends most of his free time with his wife Kirsten and 3 children, Zia (8), Scarlett (6), and Leo (3), but also enjoys running, skiing, snowboarding, sailing, playing music (bass, drums), and home improvement.

#### Congratulations to:

Lindsay Tetreault PhD for winning the Canadian Spine Society 2016 Meeting Fellow's Best Paper Award. The study focused on identifying the threshold duration of symptoms above which there is a negative impact on surgical outcomes. The main conclusions from this project were that patients who are operated on within four months of symptom presentation have better mJOA outcomes than those treated after this four month cut-off. This finding is especially true in patients with moderate and progressive disease.

#### Spine Clinical Research Fellow Lindsay Tetreault

Lindsay is a postdoctoral clinical research fellow at the Toronto Western Hospital under the supervision of Dr. Michael Fehlings. She recently graduated from her PhD at the



University of Toronto where her research focused on developing clinical prediction models to determine surgical outcomes and risk of complications in patients with degenerative cervical myelopathy. She is currently the Vice Chair of a multidisciplinary guideline project that

aims to outline how to best manage patients with mild, moderate and severe myelopathy and non-myelopathic patients with image evidence of cord compression.

#### Canadian Spine Society Meeting 2016

On Feb 24 - 27, 2016 The Canadian Spine Society 16th Annual Scientific Conference took place in Whistler British Columbia to provide a contemporary review of spine surgery and spine care in Canada. The conference is a joint meeting of the Canadian Spine Society and the Canadian Paediatric Spine Society that encompasses a full range of spinal problems and current solutions. This year the focus extended from the best means of triaging back pain patients to avoid unnecessary surgical intervention to the complication of post-operative spinal infection. The program offered a constructed mix of didactic lectures, research updates and interactive symposia. The U of T Sine Program was represented by significant participation from clinical faculty and trainees. Our spine surgeons Drs Michael Fehlings, Y. Raja Rampersaud, and Joel Finkelstein, our spine fellows Markian Pahuta, So Kato, Mohammad Zarrabian, our spine residents, Alan Martin, Anick Nater, and our graduate and post graduate trainees Aria Nouri, Lindsay Tetreault, Christopher Witiw and many of our Alumni participated in podium presentations and posters presentations with interesting works including cute Spinal Cord Injury, Degenerative Cervical Myelopathy, Metastatic Epidural Spinal Cord Compression, Spinal Osteotomies in Pediatric, and non-surgical treatment of low back pain. We are very pleased to have Drs Allan Martin and Lindsay Tetreault won Best Resident Paper Award and Fellow's Best Paper Award.

### our spine TRAINEES con't

#### Kachinga Sichizia - my Toronto experience

I was uptight and almost afraid when I walked into the clinic on the fourth floor of the Krembil neuro-sciences building to join Dr Michael G. Fehlings or MGF as he popularly referred to, in his clinic. I was new and still trying to find my feet in a totally new and complex environment. But MGF received me warmly and told me to start seeing patients and present them to him. When I told him I would be doing my Extended Patient Record or EPR certification later on in the morning, he gave me his Dictaphone and with a few instructions on how to use let me loose! The warm and generous reception I received from MGF helped me relax significantly. For the whole of the last week, my first week in Toronto, I had spent sleepless nights trying to get to grips with the EPR training programme. There were modules to be studied and an exam at the end of it. This allowed you access to patients records and the Coral imaging system and the dictation. Failure to pass this test would delay your commencement of your fellowship training. I was aware that a colleague from another African country who had been here the previous year failed this exam and was never allowed to do any surgeries.

I left the MGF clinic over lunch for the EPR test and when I came back in the afternoon, I had been certified. Now I could focus on my core business in Toronto: To attain a fellowship qualification in Spine surgery.

The University of Toronto has been my dream destination ever since I finished my neurosurgery residence in at the University of Cape Town in the year 2005. To get this opportunity was indeed a lifetime accomplishment, that is sought after by so many deserving candidates but who have never been availed this opportunity. I am forever grateful to Dr Mark Bernstein for sponsoring my programme in Toronto. My chance meeting with him over a year and half prior brought to fruition a dream long envisaged. I am grateful to the two co-directors of the Toronto City-Wide spine fellowship, MGF and Albert Yee for accepting me into this prestigious programme. I am ever thankful for the opportunity to work with and learn from Spine experts both at the UHN and the Sunnybrook Health Centres.

My expectations have not been disappointed, but this not without challenges. For one thing, I had come from a third world country and landed straight into one of the most technologically advanced medical centres in the world. It was a strange place where everything was done differently from what I had practiced for many years. I felt like a fish out of water, but I did not allow myself to be overwhelmed. I was surrounded by younger and intellectually gifted fellows, most of whom had recently finished their residency training. With their help and with the support of the Staff, I slowly began to pick up my feet and before long, I was able to navigate my way through the complex maze.

I came from an environment, in Zambia, where there is great lack, of both expertise and equipment. In a nation of about 15million, there is only about 5 neurosurgeons and 2 surgeons who have competence in Spine surgery. The health system is most government funded though there is now an emergence of the private hospitals and medical insurance. The funding in government institutions is inadequate and there is a very poor doctor to patient ratio.

But what does a programme like the Spine fellowship do for a Third World Country? My time in Toronto has exposed me to the first World medicine and empowered me with not only advanced surgical skills, but grounded in surgical techniques and other clinical disciplines.

I have spent a lot of time preparing presentations and looking at new materials critically.

As I prepare for the end of my fellowship, I know I am a better physician for having spent this one year in Toronto, working and learning from world leaders in the field of Spine surgery. I have had the opportunity to benefit from observing other masters like Fred Gentili and Mark Bernstein doing their work. I am confident that my nation will benefit greatly from the expertise I have gained from University of Toronto. My students will have a better teacher and my patients a more competent physician.

#### **Kachinga**



Kachinga Sichizia with Michael Fehlings

#### Hamed Reihani Kermani- my farewell

Life is like a journey on a train...

With its stations...

With changes of routes...

and with accidents!

We board this train when we are born and our parents are the ones who get our ticket. We believe they will always travel on this train with us. However, at some station our parents will get off the train, leaving us alone on this journey.

As time goes by, other passengers will board the train, many of whom will be significant - our siblings, friends, children, and even the love of our life.

Many will get off during the journey and leave a permanent vacuum in our lives. Many will go so unnoticed that we won't even know when they vacated their seats and got off the train!

This train ride will be full of joy, sorrow, fantasy, expectations, hellos, good-byes, and farewells. A good journey is helping, loving, having a good relationship with all co passengers... and making sure that we give our best to make their journey comfortable.

The mystery of this fabulous journey is:

We do not know at which station we ourselves are going to get off.

So, we must live in the best way - adjust, forget, forgive and offer the best of what we have. It is important to do this because when the time comes for us to leave our seat ... we should leave behind beautiful memories for those who will continue to travel on the train of life.

Thank you for being one of the important passengers on my train... don't know when my station will come... don't want to miss saying: "*Thank you*"

#### Reihani



#### **Program CLINICAL TRIAL**

#### **RISCIS Trial**

The Riluzole in Spinal Cord Injury Study is principally sponsored by AOSpine North America with partnership and co-funding from: AOSpine International Spinal Cord Injury Knowledge Forum; North American Clinical Trials Network (NACTN); US Department of Defense (DOD); Ontario Neurotrauma Foundation; and Rick Hansen Institute (RHI). RISCIS is a worldwide multicentre trial launched to evaluate efficacy and safety of Riluzole in improving neurological motor outcomes of patients with acute spinal cord injury at 6 months post injury.

Under the U of T Spine Program umbrella, the trial is also launched and has been approved for data sharing agreement in three affiliated sites: Toronto Western Hospital (TWH); Sunnybrook Health Sciences Centre (SHSC); and St. Michael's Hospital (SMH). Eligibility is Age 18 to 75 years, Acute (< 14 days old) spinal cord injury of traumatic origin, Spinal cord injury at the neurologic level from C4 to C8, ASIA Impairment Scale level A, B or C, and no other life-threatening injury.

**Contact Research Coordinators:** 

TWH: Yuriy Petrenko. (416) 790-4535. Yuriy.Petrenko@uhn.ca SHSC: Katrine Milner. (416) 505-7686. katrine.milner@sunnybrook.ca.

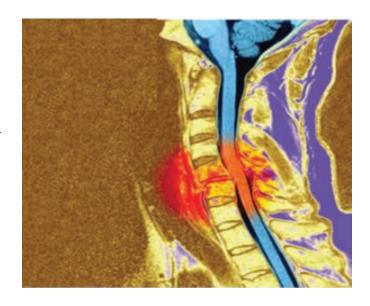
SMH: Kayee Tung. (416) 864-6060 Ext. 2713. TungK@smh.ca



#### Lumbar Spinal Stenosis Study

The trial has completed recruitment of 104 participants for this study. Follow-up assessments are 8 weeks, 3 months, 6 months, and 12 months with primary outcome in change in walking capacity measured at 6 months. The trial falls under the umbrella of the U of T Spine Program.

Contact Investigator: Carlo Ammendolia DC PhD CCRF. Mount Sina Hospital. CAmmendolia@mtsinai.on.ca



#### **Primary Spine Tumors Study**

Brought up under the U of T Spine Program umbrella this randomized trial is in its final stage for approval. The synopsis suggested inclusion of patients with painful vertebral metastases who are not eligible for surgery and randomization between conventional radiations to stereotactic radiation The trial will launch with multiple sites on board from Montreal and Toronto (SBK and PMH) with a recruitment of 54 patients.

Contact Investigator: Arjun Sahgal BScMD FRCPC. Sunnybrook Health Sciences Centre. Arjun.Sahgal@sunnybrook.ca



#### **Announcements**

#### 2016 Veronique Benk Visiting Professorship

Host sites: Sunnybrook Helath Sciences Centre & U of T

Spine Program

Host: Associate Professor Arjun Sahgal, SHSC Visiting Professor: Dr Mark Bilsky - New York

Talk: Separation Surgery and Stereotactic Radiosurgery: Why less is more Shifting Paradigms in the Treatment of

Metastatic Spine Disease

Time: Tue, May 10, 2016 @ 1:00 pm- 2:00pm Location: The Jenkin Auditorium (Room: TB 21)

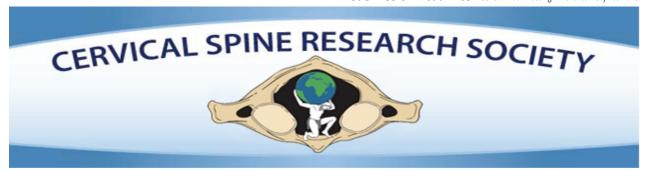
## U of T and China Symposium on MSK and Spine Oncology

Host site: U of T Spine Program and SHSC

Host: Professor Albert Yee Time: Friday, October 7, 2016

Location: TBD

Submission Deadlines - CSRS Annual Meeting in Toronto Nov/Dec 2016



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February 25, 2016

#### Upcoming deadlines and important information:

- FOSA Specialty Day Meeting, Sat. March 5 in Orlando. Click here for program schedule (<a href="http://www.csrs.org/wp-content/uploads/2016/02/FOSA AAOS Program Final V1.pdf">http://www.csrs.org/wp-content/uploads/2016/02/FOSA AAOS Program Final V1.pdf</a>)
- 2. CSRS Research Grant Letter of Intent (LOI) **application** (https://form.jotform.com/51314320920138) is now available. Deadline **April 1**.
  - 2016 Annual Meeting Call for Abstracts. Submit your abstract - deadline May 2. Online abstract submission, and instructions and guidelines at ( https://ebus.csrs.org/default.aspx?tabid=168&appl\_code=ABSTRACTS)
- 4. Europe will be the site of the 2017 Traveling Fellowship. Candidates must be under 45 years of age and reside in either North or South America only. **Applications now available online** (https://form.jotform.com/51607206259151)

Deadline for applications is **September 1**.

5. Deadline for member applications is **September 15**. For more information visit the CSRS website (http://www.csrs.org/membership/)

Contact the CSRS office at <a href="mailto:csrs@aaos.org">csrs@aaos.org</a> or (847)698-1628 with questions. Thank you.

Cervical Spine Research Society | 847-698-1628 | <u>csrs@aaos.orq</u> | <u>www.csrs.orq</u> 9400 W. Higgins Rd. Suite 500 Rosemont, IL 60018-4226 The U of T Spine Program acknowledges the continued support of the University of Toronto from Department of Surgery, Division of Orthopaedic Surgery, and Division of Neurosurgery, as well as the support from our Industy Partners: DePuy Synthes and Ethicon, Medtronic, Zimmer, and Stryker.

Donations to the University of Toronto Spine Program support educational events, research, clinical fellowship, and ongoing programmatic initiatives towards advances of spine care in Canada and worldwide

Contact:

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web: http://surgery.utoronto.ca/programs/spine.htm