



Surgery  
UNIVERSITY OF TORONTO

# Spine Program

**UNIVERSITY OF TORONTO**  
**SpineFEST™ VISITING PROFESSORSHIP**

Friday, June 15, 2012  
The Old Mill Inn  
Toronto, Canada



## University of Toronto Spine Program

Remarks from the Co-Directors:

Dr. Albert Yee

Dr. Michael Fehlings



Colleagues,

The 2011-2012 academic year highlights an important time for us. This year marks our 5<sup>th</sup> annual University of Toronto SpineFEST™, the last 4 years having being led by our UT Spine program that was formalized in the late fall of 2008. The vision and aims since our inaugural SpineFEST™ remain the same – “to enhance city wide collaboration bringing together clinicians and researchers alike, from around the university and with a common interest in spinal academia”. We are enhancing linkages amongst our faculty as well as students alike. We are also bridging the continuum between clinical and fundamental research. This broad representation has been a model for us in our program organizational and committee structure. We have also been fortunate to garner national and international recognition of the UT Spine Program as a strong academic entity. This has been facilitated by the broad variety of respected national and international spine faculty who have visited the UT Spine Program--either as part of our quarterly hospital based visiting professor series, as one of our visiting research professors or as our Tator-Hall visiting lecturer.

As a program, we have planned, and implemented many new initiatives arising from our January 2010 strategic planning process. Our Program Council, with continued commitment and strong leadership from the UT Divisions of Neurosurgery and Orthopedic Surgery, the Department of Surgery, the Toronto Academic Health Sciences Network (TAHSN) spinal units

and the University of Toronto (UT) spine research community, has been active in facilitating the implementation of our academic vision.

The UT Spine Program continues to advocate for clinical resources, access and provision of timely care for our spinal patients. We completed our UT-SpineLINK AFP funded project which, in parallel with other Ministry of Health and Long Term Care (MOH-LTC) as well as TAHSN based initiatives, has resulted in improved access for Ontarian's with emergent spinal conditions. Recent activity by key program members (Dr. R. Rampersaud and colleagues) have led important efforts toward enhancing triage and care of many of our 'elective' patients with degenerative conditions of the spine. There is promise with the recent MOH-LTC adoption of recommendations regarding the indications for radiologic evaluation in chronic mechanical low back pain as well as enhanced support for advanced practice professionals in the initial evaluation of spinal patients referred for specialty opinion.

Our research committee continues to be very active. With internationally respected programs in spinal biomechanics, spinal cord injury, disc biology, tissue engineered/regenerative spinal strategies and clinical trials/outcomes-based research, we are fortunate and benefit from the wealth of local expertise and resources that are available. This year, we were privileged to host both Dr. Tom Oxland from UBC (Sunnybrook Health Sciences Centre as the host hospital co-organized by Drs Albert Yee and Cari Whyne) as well as Dr. Mauro Alini from the AO Spine Research Foundation (hosted by Dr. Rita Kandel and the Mount Sinai Hospital). Both of our distinguished visitors provided valued perspectives on spinal biomechanics as well as disc biology. Importantly, our visiting professors had a tremendous opportunity to meet with many researchers from around the city and in our various TAHSN hospitals. On the clinical research side, we have secured further AFP innovation funding for Phase II of UT-SpineLINK which aims to harmonize care protocols around the city, as well as support a planned Continuing Medical Education Course (November 9, 2012) with Dr. Robert Bell as our keynote speaker. We look forward to this CME as an enhanced format extending beyond the traditional venue and will include new e-based modules that are aimed to enhance our impact and facilitate knowledge dissemination. We are appreciative of the efforts of our UT SpineLINK CME Organizational Course Committee (Co-Chairs: Fiona Webster, Michael Fehlings, Albert Yee) and look forward to this in-person meeting as well as a planned parallel 'virtual' meeting.

This year we are also pleased to announce a new professorship in spine, supported by the Canadian Chiropractic Research Foundation (CCRF). The CCRF has committed to a limited-term Professorship (\$500,000 over 5 years) which will be housed within the UT Spine Program. Dr. Carlo Ammendolia will be the inaugural holder of this professorship, which complements an existing UT-CCRF professorship held by Dr. Mark Erwin. This exciting development builds on the strength of recognized non-surgical clinical expertise in our program and will foster research that will evaluate and improve outcomes for our patients with spinal disorders.

We continue to develop further our educational programs. Dr. Stephen Lewis chaired the Clinical Fellows Surgical Skills Course at the beginning of the academic year which provided an excellent opportunity to welcome our in-coming clinical fellows to the university program. It

also served as an opportunity for our spinal fellows to meet each as well as our city-wide clinical faculty. Building upon this exciting initiative, we held our inaugural 'Annual Research Update', which was organized by design to coincide with and complement the clinical course. The research program was chaired by Dr. Karl Zabjek who organized an excellent session that was well received. We heard of ongoing research activities by our graduate students and post-doctoral fellows from around the city. The sharing of research ideas, opportunities to dialogue on potential collaborative research, as well as to introduce our clinical fellows to our research students (and vice-versa) reflects well our program's vision. We would like to thank both Drs. Zabjek and Lewis for their significant efforts in leading what will be an important annual event that commences each academic year.

This year we have also galvanized the foundation our city-wide spine journal club. These rounds have been extremely well received by our clinical fellows as well as surgical residents. We thank Dr. Ford for organizing the Sunnybrook Health Sciences Centre session. He led discussions on several recent key impact research articles from the Spine journal. Drs. Eric Massicotte and Michael Fehlings also held an excellent session on spinal neurologic research on behalf of the University Health Network – Toronto Western Hospital. In education, we were also fortunate this year to have benefited from the Division of Anatomy, Department of Surgery, University of Toronto Harland-Smith Lectureship hosting Dr. K. Daniel Riew (Washington University School of Medicine, St. Louis). We were treated to an exceptional presentation on cervical spinal anatomy and its importance to spinal care. These visits were complemented by invited talks given by Professors Alan Crockard (QueenSquare/UCL) and Jean Wrathall (George Washington University) in the areas of cervical spine and spinal cord injury. We also look forward in mid June 2012 to the 37<sup>th</sup> Annual William S. Keith Professorship in Neurosurgery honoring Dr. Christopher Shaffrey as our invited visiting professor and hosted by the University Health Network - Toronto Western Hospital.

Strategically, our spine program is also taking a parallel approach in opportunities to enhance trans-disciplinary collaboration in spinal surgical fellowship education. We have not only expanding venues locally but are also collaborating on a national initiative, through the Canadian Spine Society, exploring the opportunity to develop a national fellowship education curriculum. This initiative will also consider the Royal College of Physicians and Surgeons of Canada Areas of Focused Competency (AFC) Diploma program, a program designed to formally recognize disciplines such as spinal surgery with a Diplomate of the RCPSC (i.e. DRCP) designation. Dr. Yee co-chaired a fellowship symposium at the recent CSS annual meeting and both Drs Yee and Fehlings are actively engaged in discussions with the CSS on developing a working group to enhance spinal surgical fellowship education in Canada. At the residency level, Dr. Massicotte's hands—on resident spine course continues to represent an excellent opportunity for neurosurgical and orthopedic residents at UT and across Canada to obtain practical exposure to spinal anatomy and surgical techniques. We are also starting to see enhanced city-wide and trans-disciplinary collaboration in residency education; we are thankful to Dr. Massicotte's organization of in-folded spine fellowship opportunities during residency that includes multi-site as well as multi-supervisor collaboration. Dr. Finkelstein has also more formalized the Sunnybrook Health Sciences Centre based clinical fellowship with rotations in both orthopaedic as well as neurosurgical spine and at various centres around the city. We look

forward as a group to discuss these as well as other residency and fellowship opportunities with the valued input of our educational committee.

Importantly, we would like to extend a sincere welcome and thank you to Professor. Jean Dubousset who is our Annual UT Spine Visiting Professor for SpineFEST™. We very much look forward to his Tator-Hall Lectureship on the 'Importance of the 3D in Spinal Pathology, Balance, and Treatments'. He is recognized as an international leader in the field of spinal technology and deformity surgery. We also look forward today to a terrific scientific session on neurologic risk in spinal deformity surgery, highlights by our faculty researchers, as well as clinical and research trainee presentations in both oral and poster formats. We would also like to extend thanks to Dr. Reinhard Zeller for organizing and acting as his local host during Dr. Dubousset's visit.

In closing, our Program is extremely grateful to Ms. Connie Johnson who has been instrumental in coordinating programmatic efforts for us over the years. We would also like to acknowledge the very strong support of the Department of Surgery as well as the Divisions of Neurosurgery and Orthopaedic Surgery of our Program, all of who are committed to our vision. It remains our privilege to work together further building our program.

The image shows two handwritten signatures in black ink. The signature on the left is 'Michael Fehlings' and the signature on the right is 'Albert Yee'. Both are written in a cursive, professional style.

Michael Fehlings and Albert Yee  
Co-Directors, U of T Spine Program

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Friday, June 15<sup>th</sup>, 2012  
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|                                 |   |
|---------------------------------|---|
| 7:00– 7:30<br>Balmoral Room     | <i>Welcome Reception – Breakfast</i>  |
| 7:30 – 7:45<br>Westminster Room | <b><i>Introductory Comments</i></b><br><br>University of Toronto Department of Surgery Spine Program<br><i>Drs. Albert Yee and Michael Fehlings (Program Co-Directors)</i><br><br>Greetings from the University of Toronto<br><i>Alison Buchan, Vice Dean, Research &amp; International Relations</i> |
| 7:45 – 8:00                     | <b><i>Welcome Remarks</i></b><br><i>Dr. Charles Tator, Dr. Hamilton Hall</i>  |
|                                 | <b><i>THE TATOR-HALL VISITING PROFESSOR LECTURE</i></b>   |
| 8:00 – 8:15                     | <b><i>Introduction of Visiting Lecturer</i></b><br><i>Dr. Reinhard Zeller</i><br><br>Visiting Professor- Dr. Jean Dubousset   |
| 8:15 – 9:00                     | <i>Keynote Address</i><br><br>"Importance of the 3D in Spinal pathology,<br>Balance and Treatments "<br><br><b>Dr. Jean Dubousset</b>   |
| 9:00 – 9:15                     | <i>Discussion - Moderator Dr. Michael Fehlings</i>  |

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|                                | <p><b>SESSION 1</b><br/> <b>Neurological risks related to deformity surgery</b><br/> <b>Moderator: Dr. Michael Fehlings</b></p> |
| 9:15 – 9:30                    | <p>Scoli-Risk study<br/> <b>Dr. Michael Fehlings</b></p>  |
| 9:30 – 9:45                    | <p>Evoked Potentials<br/> <b>Dr. David Houlden</b></p>  |
| 9:45 – 10:00                   | <p>IOM for pediatric deformity<br/> <b>Dr. Sam Strantzas</b></p>  |
| 10:00– 10:15                   | <p>Applications of neuromonitoring in clinical cases of deformity<br/> <b>Dr. Stephen Lewis</b></p>                             |
| 10:15 – 10:30                  | <p>Discussion</p>   |
| 10:30– 10:45<br>Balmoral Room  | <p><i>Coffee Break</i></p>  |
| 10:45 – 11:45<br>Balmoral Room | <p>Poster Presentations &amp; Judging</p>   |
|                                | <p><b>SESSION 2: Faculty Presentations</b></p>  |
| 11:45 – 12:00                  | <p>Managing Degenerative Spinal Deformity<br/> <b>Dr. Michael Ford</b></p>  |
| 12:00 – 12:15                  | <p>103 SMA Operative Scoliosis Cases<br/> <b>Dr. Reinhard Zeller</b></p>  |
| 12:15 – 12:30                  | <p>Determinants of Posture and Mobility in Paediatric Spinal Deformity<br/> <b>Dr. Karl Zabjek</b></p>                          |
| 12:30– 12:45                   | <p>Revisiting UT-SpineLINK<br/> <b>Dr. Albert Yee</b></p>   |
| 12:45 – 13:00                  | <p>Discussion</p>   |
| 13:00 – 13:45<br>Balmoral Room | <p><b><i>Lunch &amp; Poster Viewing</i></b></p>   |

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|---------------|--|
|               | <p align="center"><b>SESSION 3: Trainee Presentations (10 minute presentation, 5 minutes discussion)</b></p> <p align="center"><b><i>I: Invited Presentations</i></b></p>  |
| 13:45 – 14:00 | <p align="center">A Systematic Review of Cervical Arthroplasty Trials<br/><b>Dr. Aria Fallah</b></p>   |
| 14:00 – 14:15 | <p align="center">In-Hospital Mortality and Surgical Utilization in Severely Polytraumatized Patients With and Without Spinal Injury<br/><b>Dr. Edward Lansang</b></p>   |
|               | <p align="center"><b><i>II: SpineFEST Abstract Presentations</i></b></p>   |
| 14:15 – 14:30 | <p align="center">The risk of vertebral compression fracture (VCF) post-spine stereotactic body radiotherapy (SBRT) and evaluation of the spinal instability neoplastic score (SINS)<br/><b>Dr. Marcelo da Cunha</b></p> |
| 14:30 – 14:45 | <p align="center">The effect of ephrin-B3 on the survival of adult rat spinal cord derived neural stem/progenitor cells (NSPC) after spinal cord injury (SCI)<br/><b>Susan Fan, BSc.</b></p>                             |
| 14:45 – 15:00 | <p align="center">Three Dimensional Analysis of Brace Biomechanical Efficacy for Patients with AIS<br/><b>Dr. David Lebel</b></p>  |
| 15:00 – 15:15 | <p align="center">Discussion</p>   |
| 15:15 – 15:30 | <p align="center"><b>Awards Presentations and Closing Remarks<br/>(Drs. Michael Fehlings and Albert Yee)</b></p>   |

## 2012 SpineFEST™ VISITING PROFESSOR

### Dr. Jean Dubousset



Jean Dubousset is hailed as one of the world's most famous spinal deformity surgeons, in the footsteps of a long line of creative French spine surgeons.

His alma mater is the University of Paris, France, where he completed an internship and residency earning his medical degree in 1965. He joined the medical staff of the hospital Saint-Vincent-de-Paul in Paris where he was later appointed Professor of Pediatric Orthopedic Surgery.

Amongst numerous awards, he received France's highest honor, the order of the "Legion d'Honneur" and became a member of its most prestigious scientific association, the French National Academy of Medicine. He strongly believes in live medical interaction as the best way of teaching and is a member of more than 20 international medical societies.

He is responsible for many seminal advancements in pediatric orthopedics including his pioneering work in limb preserving surgery for malignant bone tumors.

One of the biggest breakthroughs in spinal deformity surgery was that made by Jean Dubousset: Together with Yves Cotrel he co-invented the Cotrel-Dubousset system, a device that has revolutionized spinal deformity surgery ever since 1983. It replaced successfully the Harrington rod. All current spinal instrumentations derive in one way or another from his system.

During his career, he determined that clinical observation was fundamental to understanding what needed to be done for patients with scoliotic deformities, and how to approach the most complex corrective surgery from a scientific standpoint. He is also known for his compassion with a patient centered approach opposing adamantly any interference from cost-oriented statistical institutions.

Famous for his “Out-of-the-box thinking” he introduced the idea of 3D analysis of scoliotic deformities abandoning the old erroneous concept that it is sufficient to measure the Cobb angle of a scoliosis in order to know how to treat it.

Retired from active patient care he continues to investigate novel methods of correcting deformities in early onset scoliosis and is actively participating in new 3D radiographic investigation methods.

## THE TATOR-HALL VISITING PROFESSOR LECTURE



**Dr. Charles Tator** is a Professor in the Department of Surgery, at the University of Toronto, and a neurosurgeon at the Toronto Western Hospital. He is the former Chair of Neurosurgery at the University of Toronto. He started the first Acute Spinal Cord Injury Unit in Canada in 1974, and has reported on the epidemiology, prevention and treatment of spinal cord injury. He has undertaken seminal translational and clinical research in spinal cord injury. In 1992, he founded ThinkFirst, Canada, a national brain and spinal cord injury foundation whose mission is to reduce the incidence of catastrophic injuries in Canada. In 2008, the University of Toronto Press published his book “Catastrophic Injuries in Sports and Recreation, Causes and Prevention-a Canadian Study.” He has held two research chairs at the University of Toronto, the Dan Family Chair in Neurosurgery and the Campeau Family-Charles Tator Chair in Brain and Spinal Cord Research. In 2000, he received the Order of Canada, and in 2009 he was inducted into the Canadian Medical Hall of Fame.



**Dr. Hamilton Hall** is a Professor in the Department of Surgery at the University of Toronto and a staff consultant at the Sunnybrook Health Sciences Center. In 1974 Dr. Hall founded the Canadian Back Institute (CBI Health Group), now the largest rehabilitation company in Canada. Dr. Hall continues to serve as its Medical Director. In addition to over 100 published articles and book chapters, Dr. Hamilton Hall is the author of the best-selling Back Doctor series, most recently A Consultation with the Back Doctor. He lectures internationally on the management of Pain Disorder. Locally, his medical student course in the evaluation of the low back has been a favorite of trainees over the years; he has a reputation as an engaging speaker and a superb teacher. He is co-founder and currently Executive Director of the Canadian Spine Society and has been instrumental in bringing together the diverse disciplines in spinal care and in advocating for the specialty.

## TRAINEE PRESENTATIONS



**Marcelo da Cunha** graduated from Universidade Souza Marques in Rio de Janeiro, Brazil and finished his residency in Neurosurgery in 2007. He was a clinical fellow in Neurotrauma and Spine Surgery at Sunnybrook Hospital from 2010 to 2012. He has several presentations in Brazilian and international spine meetings.



**Dr. Aria Fallah** is a fourth year Neurosurgery resident at the University of Toronto. He is also a Masters student, specializing in Clinical Epidemiology in the Health Research Methodology program at McMaster University. His clinical interests are in pediatric and epilepsy neurosurgery. His research interests are in surgical trial design, health research methodology, meta-analysis, surgical outcomes and knowledge translation. He has authored 27 peer-reviewed publications and 3 book chapters.



**Edward Lansang** is presently a PGY 5 in orthopaedics at the University of Toronto, through the IMG program. He previously finished a program in orthopaedics at the University of the Philippines and subsequently did a spine fellowship at Sunnybrook Health Sciences Centre in Toronto. He also has a special interest in Foot and Ankle surgery and he intends to pursue a fellowship in this subspecialty at the Toronto Western Hospital after his residency.



**David Lebel** attended medical school at Ben-Gurion University in Beer-Sheva. During that time he completed his Ph.D in neurophysiology. He then joined the orthopedic residency program at Soroka Medical center Beer- Sheva. Prior to arriving to the Hospital for Sick Children in Toronto he completed a year of pediatric orthopedic fellowship in Dana Children's Hospital in Tel Aviv. At the end of his clinical fellowship David will stay for a combined clinical- research year in which he will focus on studying a novel approach of selective growth plate modulation. On January 2013 David is planned to join the Pediatric orthopedic department in Dana children's hospital in Tel-Aviv, Israel as a staff surgeon.



**Susan Fan, BSc:** Susan Fan received an Honours Bachelor of Science degree in neuroscience specialist and physiology and psychology minors at the University of Toronto in 2009. She is currently completing a Master of Science degree through the Institute of Medical Science at the University of Toronto under the supervision of Dr. Charles Tator. Her research examines the effect of ephrin-B3 on the survival of adult rat spinal cord derived neural stem/progenitor cells in the injured rat spinal cord.

## **UNIVERSITY OF TORONTO SPINE FACULTY**

**Dr. Henry Ahn:** St. Michael's Hospital

**Dr. Margarete Akens :** Sunnybrook Research Institute

**Dr. Benjamin Alman:** The Hospital for Sick Children

**Dr. Carlo Ammendolia:** Mt. Sinai Hospital

**Dr. Leo da Costa:** Sunnybrook Health Sciences Centre

**Dr. James Drake:** Hospital for Sick Children

**Dr. Mark Erwin:** Toronto Western Hospital

**Dr. Mahmood Fazl:** Sunnybrook Health Sciences Centre

**Dr. Michael G. Fehlings:** Toronto Western Hospital

**Dr. Joel Finkelstein:** Sunnybrook Health Sciences Centre

**Dr. Michael Ford:** Sunnybrook Health Sciences Centre

**Dr. Howard Ginsberg:** St. Michael's Hospital

**Dr. Hamilton Hall:** Sunnybrook Health Sciences Centre

**Dr. G. Hawryluk:** Neurosurgery Resident

**Dr. Rita Kandel:** Mt. Sinai Hospital

**Dr. Stephen Lewis:** Toronto Western Hospital

**Dr. Todd Mainprize:** Sunnybrook Health Science Centre

**Dr. Barry Malcolm:** Sunnybrook Health Sciences Centre

**Dr. Eric Massicotte:** Toronto Western Hospital

**Dr. Cindi Morshead:** Donnelly Centre for Cellular and Biomolecular Research

**Dr. Farhad Pirouzmand:** Sunnybrook Health Sciences Centre

**Dr. Raj Rampersaud:** Toronto Western Hospital

**Dr. Arjun Sahgal:** Sunnybrook Health Sciences Centre

**Dr. Michael Schwartz:** Sunnybrook Health Sciences Centre

**Dr. Molly Shoichet:** .Terrance Donnelly Centre for Cellular & Biomolecular Research

**Dr. Charles Tator:** Toronto Western Hospital

**Dr. Alexander Velumian:** Toronto Western Hospital

**Dr. James G. Wright:** The Hospital for Sick Children

**Dr. Cari Whyne :** Sunnybrook Health Sciences Centre

**Dr. Albert Yee:** Sunnybrook Health Sciences Centre

**Dr. Karl Zabjek:** Toronto Rehabilitation Institute

**Dr. Reinhard Zeller:** The Hospital for Sick Children



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***U of T Dept. of Surgery***

***U of T Division of Orthopaedic Surgery***

***U of T Division of Neurosurgery***

***Medtronic***

***for the 2012 SpineFEST™ Visiting Professorship  
in Spinal Surgery***

***as well as DePuy, Stryker and Synthes for their past and  
ongoing support of the events of the U of T Spine Program.***