

Surgery
UNIVERSITY OF TORONTO

Spine Program

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

Friday, June 19, 2009
MaRS, University of Toronto,
Toronto, Canada



University of Toronto Spine Program

Remarks from Co-Directors:

Dr. Albert Yee



Dr. Michael Fehlings



The University of Toronto has a rich history in spinal care and the 2008-2009 academic year has marked a time of program strengthening aimed towards enhancing the functional integration of clinical care, research, teaching, and educational activities. We plan to implement a framework that will provide an opportunity for broader trans-disciplinary academia spanning the fundamental sciences through to the clinic. Our academic spine calendar includes both current and new initiatives. We would like to thank the many individuals that have expressed such a strong interest and have committed their time to working with the Program Committee in organizing our Annual Visiting Spine Professorship, SpineFEST™. We are privileged to have Dr. Jeffrey Wang from UCLA as our inaugural visiting professor as well as Dr. Eve Tsai from the University of Ottawa, both of whom are presenting their experience on cutting edge spinal imaging technologies. We are also excited about the new quarterly Toronto Academic Health Sciences Network (TAHSN) hospital based visiting professorships, the first of which will be hosted by St. Michael's Hospital. Drs. Howard Ginsberg and Henry Ahn are coordinating a terrific day with Dr. Tani visiting from Jikei University in Tokyo.

A program council has been created with leadership from TASHN spinal units and representation from the UT spine research community. We also plan to leverage several existing educational courses of strong reputation focused on surgical skills acquisition, spinal deformity, minimal-access surgery, and paediatrics. Additionally aligning the UT GTA spine

rounds with other programmatic events will enhance our relationships between the university and community. These efforts could not be accomplished without the tremendous support of program faculty.

These are but a few of the numerous collaborative initiatives that are being implemented in parallel. A strategic planning session planned for January 2010 will allow use to further evaluate opportunities in resident, fellowship, and graduate level teaching, research team grant funding opportunities, and important advocacy in areas that requires leveraging the collaborative, integrative nature of the UT Spine Program to link with the provincial Local Health Integrated Networks (LHINs) and other key stakeholders to examine spine wait-time issues and care delivery models. With recent success in an operating grant competition (Alternate Funding Plan Phase III Innovation Funds), we are poised to transform the provision of spinal care in an integrated approach. We will continue to advocate strongly at the local, regional, and national levels to meet the growing needs of patients with spinal diseases.

We would 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 and its vision in 'innovation and excellence in the delivery of spine care with a unique collaborative program of clinical expertise, research, training, and education'.

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

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

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7:30 – 8:00	Welcome Reception – Breakfast
8:00 – 8:15	Introductory Comments: University of Toronto Department of Surgery Spine Program <i>Drs. Albert Yee and Michael Fehlings (Program Co-Directors)</i> Greetings from the University of Toronto: <i>Drs J. Rutka and B. Alman</i>
8:15 – 8:45	Introductory Case Presentations <i>Drs. A. Zahrai and G. Hawryluk / Drs. I. Moss and E. Dare</i> <i>Moderator: Dr. E. Massicotte</i>
	SESSION 1 – SPINAL IMAGING Dr. Cari Whyne (Moderator)
8:45 – 9:15	MR Tractography <i>Dr. Eve Tsai (University of Ottawa, Division of Neurosurgery)</i> <i>Introduction by: Dr. H. Ginsberg</i>
9:15 – 9:25	Automated Modelling of the Spine <i>Mr. Parsa Hojjat</i> <i>(Supervisor: Dr. C. Whyne)</i>
9:25 – 9:35	MR Predictors of Outcome in Cervical Spondylotic Myelopathy <i>Dr. Babak Arvin</i> <i>(Supervisor: Dr. M. Fehlings)</i>

9:35 – 9:45	Ultrasound Guided Thoracic Discectomy <i>Dr. H. Ginsberg</i>
9:45 – 9:55	MR Imaging of Neural Stem Cell-Based Remyelination of the Injured Spinal Cord <i>Dr. Soheila Karimi</i>
9:55 – 10:05	Pre-Clinical In Vivo Imaging for Vertebral Metastatic Therapy <i>Dr. M. Akens</i>
10:05 –10:30	Discussion
10:30 – 11:00	Coffee Break
	THE TATOR-HALL VISITING PROFESSOR LECTURE
11:00 – 11:15	Introduction of Visiting Lecture <i>Drs. M. Fehlings and A. Yee</i> Visiting Professor – Dr. Jeffrey C. Wang, MD
11:15 – 12:00	Kinetic MRI Evaluation of the Cervical and Lumbar Spine <i>Dr. J. Wang, UCLA, Calif.</i>
12:00-12:50	Lunch
	SESSION 2 – SPINAL EDUCATION Dr. Steve Lewis (Moderator)
12:50– 13:00	Surgical Skills Acquisition in Pedicle Screw Insertion <i>Dr. E. Massicotte</i>
13:00 – 13:10	What Does It Take to Be a Spine Surgeon? A Review of Competencies in Fellowship Training <i>Dr. H. Malempati (Surgeon Scientist Program)</i>

13:10 – 13:55	<p>Round Table Discussion The Future of Spine Specialty Training <i>Moderators: Drs. M. Fehlings and S. Lewis</i></p> <p><i>Dr. Charles Tator – Professor of Neurosurgery, Toronto</i> <i>Dr. Hamilton Hall – Executive Director, Canadian Spine Society</i> <i>Dr. Raj Rampersaud – President, Canadian Spine Society</i> <i>Dr. Eric Massicotte – Division of Neurosurgery, Toronto</i> <i>Dr. Jeffrey Wang – Professor of Orthopaedics and Neurosurgery, UCLA School of Medicine</i></p>
	<p style="text-align: center;">SESSION 3 – SPINAL OUTCOMES Dr. Henry Ahn (Moderator)</p>
13:55 – 14:05	<p>Five Year Outcomes of the Spine-Hip-Knee Project <i>Dr. Raj Rampersaud</i></p>
14:05 – 14:15	<p>The AO Spine North America Cervical Spondylotic Myelopathy Trial <i>Dr. M. Fehlings</i></p>
14:15 – 14:25	<p>Patient Access and Wait for Spine Surgery – The Problem and Looking for Solutions <i>Dr. A. Yee</i></p>
14:25 – 14:35	<p>Shifting Expectations and the Phenomenon of Response Shift in Spine Surgery <i>Dr. J. Finkelstein</i></p>
14:35 – 14:45	<p>Randomized versus Non-Experimental Study Design in Spine Surgery <i>Dr. H. Ahn</i></p>
14:45	<p>Closing Comments</p>
15:00 – 16:00	<p>Wine and Cheese</p>

2009 SpineFEST™ VISITING PROFESSOR

Dr. Jeffrey C. Wang, MD

Professor of Orthopaedic Surgery and Neurosurgery

Executive Director, UCLA Comprehensive Spine Center

Chief, Spine Service, Department of Orthopaedic Surgery

and West Los Angeles Veterans Administration Medical Center

Director, UCLA Orthopaedic Spine Fellowship

David Geffen School of Medicine at UCLA



Jeffrey C. Wang earned a Bachelor of Science degree in Biological Sciences at Stanford University and his M.D. degree *cum laude* at the University of Pittsburgh School of Medicine. He did his residency in Orthopaedic Surgery at UCLA and completed a fellowship in Spine Surgery at Case Western Reserve University. In 1997, he joined the David Geffen School of Medicine at UCLA as Assistant Professor of Orthopaedic Surgery, in 2002 also was appointed Assistant Professor of Neurosurgery, and became Associate Professor in both disciplines in 2003, when he was designated Executive Director of the UCLA Comprehensive Spine Center.

Among Dr. Wang's honors are the Cervical Spine Research Society's 2004 Research Grant Award, International Society for Optical Engineering's 3rd Place Best Paper Award in 2003, North American Spine Society's 2002 Outstanding Poster Presentation Award for Research, and Scoliosis Research Society's Russell Hibbs Award for Outstanding Basic Science Research in 1999. He is a member of several associations, including the American Academy of Orthopaedic Surgeons and Alpha Omega Alpha Honor Society. He is board-certified in Orthopaedic Surgery and has held office with the Western Orthopaedic Association, North American Spine Education Committee, and North American Spine Board. At present, Dr. Wang serves on 16 committees ranging from the North American Spine Society Task Force on New Technology Assessment and Cervical Spine Research Society Committee on Research and Awards to the Orthopaedic Resident Selection Committee at UCLA and Department of Veterans Affairs Task Force on Chronic Pain Management (West Los Angeles).

To date, Dr. Wang has written 100 articles, seven book chapters, and 28 abstracts. Moreover, he has made 246 presentations regionally and internationally and has been a visiting professor throughout the United States, Europe, and Asia. He has been the honored guest speaker at several international Spine, Orthopaedic, and Neurosurgery Society Meetings. He also serves on 10 editorial boards, such as those for *Spine*, *The Journal of Spinal Disorders and Techniques*, *The Spine Journal*, *Journal of the American Academy of Orthopaedic Surgeons*, and *Archives of Physical Medicine and Rehabilitation*. His teaching assignments and lectures focus on the spine and Orthopaedic Surgery, Neurosurgery, and General Surgery, among other disciplines.

Dr. Wang's basic science and clinical research concerns spinal cord trauma, back pain, femur and tibia fractures, anterior cervical surgery and fusion, gene therapy, nonfusion technology, bone graft alternatives, tissue engineering, and much more. All of these pursuits are dramatically changing the approach to diagnosing, treating, curing, and/or preventing a wide range of Orthopaedic diseases and injuries, particularly in adolescents and adults and those who are dedicated athletes.

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.



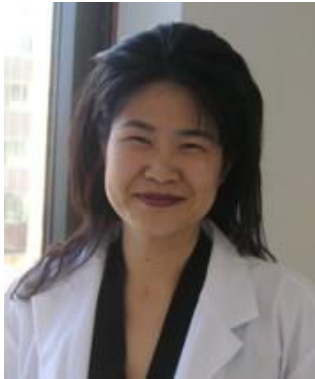
Dr. Hamilton Hall is a Professor in the Department of Surgery at the University of Toronto and a staff consultant at the Sunnybrook Health Sciences Center. In 1974 Dr. Hall founded the Canadian Back Institute (CBI Health Group), now the largest rehabilitation company in Canada. Dr. Hall continues to 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 currently is the 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.

Dr. Eve Tsai

Associate Scientist, Neuroscience, Ottawa Hospital Research Institute

Neurosurgeon, Division of Neurosurgery, The Ottawa Hospital

Assistant Professor, Division of Neurosurgery, University of Ottawa



Dr. Eve Tsai joined The Ottawa Hospital, the Ottawa Hospital Research Institute and the Faculty of Medicine at the University of Ottawa in 2006. Her surgical interests and research focus on spinal cord repair strategies, axonal regeneration, MRI imaging, and clinical outcomes after spine surgery.

UNIVERSITY OF TORONTO SPINE FACULTY AND SpineFEST™ SPEAKERS



Dr. Henry Ahn is currently on staff at St. Michael's Hospital. He has a clinical interest in adult spinal disorders and an academic focus on clinical epidemiology and outcomes relating to the spinal diseases.



Dr. Maragete Akens (Dr. med. Vet, PhD) is a recent recruit to the Sunnybrook Research Institute, Holland Musculoskeletal Program at Sunnybrook Health Sciences Centre. She holds an appointment as a Lecturer in the Department of Surgery, University of Toronto and a hospital appointment as a Junior Scientist. Her interests include vertebral metastatic disease, photodynamic therapy, and cartilage metabolism.

Dr. Babak Arvin is a spine fellow at the Toronto Western Hospital and in the University of Toronto Spine Program.



Dr. Leo da Costa worked as a staff neurosurgeon in Brazil for three years before coming to Toronto for his fellowship training. He joined the Division of Neurosurgery as an Assistant Professor in September 2008. His clinical practice is focused on patients with Cerebrovascular and Spine diseases.

Dr. Emma Dare is a postdoctoral fellow in Dr. Rita Kandel's lab Department of Laboratory Medicine and Pathobiology at the University of Toronto. She completed her PhD at the University of Ottawa, Department of Cellular and Molecular Medicine in 2008. Her research interests include tissue engineering of musculoskeletal tissues, specifically regeneration of the intervertebral disc.



Dr. James Drake is the current Harold J. Hoffman/Shopper's Drug Mart Chair in Pediatric Neurosurgery. His clinical practice focuses on hydrocephalus, spasticity, neuroendoscopic procedures, the pediatric spine, and peripheral nerve surgery. His research is devoted to engineering applications to neurosurgery.



Dr. Mark Erwin is a clinician-scientist practicing in a multidisciplinary health centre and the Toronto Western Hospital. He is the CCRF Scientist in Disc Biology and is an Assistant Professor at the University of Toronto and the Toronto Western Hospital. Dr. Erwin's research concerns various aspects of intervertebral disc biology.



Dr. Mahmood Fazl graduated from Shiraz Medical School in Shiraz, Iran, in 1975, and entered the University of Toronto Neurosurgery Training Program in 1977. Dr. Fazl became Assistant Professor in the Department of Surgery in 1991, and his main clinical interests are in the fields of spinal and trauma neurosurgery.



Dr. Michael G. Fehlings MD PhD FRCSC FACS--Michael Fehlings is a Professor in the Division of Neurosurgery and Krembil Chair in Neural Repair and Regeneration. He combines a clinical practice in complex spinal neurosurgery with a translationally oriented research program focused on traumatic and nontraumatic spinal cord injury.



Dr. Joel Finkelstein is a clinician investigator at the University of Toronto, an Associate Professor in the department of surgery, and Spine Section Head of the Sunnybrook Spine Program. His clinical and research interests include clinical epidemiology, metastatic disease and biomechanics as it relates to the spine.



Dr. Michael Ford is an Assistant Professor at the University of Toronto and is on staff at Sunnybrook Health Sciences Centre. He has a special interest spine deformity reconstruction, trauma and the surgical management of metastatic spine disease. His research focuses on novel minimally invasive treatment for high energy burst fractures of the spine.



Dr. Howard Ginsberg is an active staff member at St. Michael's Hospital and currently holds the position of Assistant Professor in the Department of Surgery and the Institute of Biomaterials and Biomedical Engineering. His research focuses on engineering applications to neurosurgical procedures with the goal of improving safety and outcome for patients.

Mr. Parsa Hojjat is currently in the second year of his PhD in Biomedical Engineering at University of Toronto. He has an interest in automation related to health and imaging and is currently working on an automated tool to quantify the effect of metastatic disease on the mechanical stability of the spine.

Dr. Gregory Hawryluk is a senior neurosurgery resident and graduate student at the University of Toronto. His graduate work is investigating how transplantation approaches to treat spinal cord injury lead to functional improvement.



Dr. Soheila Karimi is an Assistant Professor in the Department of Surgery at the University of Toronto and a Neuroscientist in the Spine Program at the Toronto Western Hospital. Her research combines the application of neural stem cells with molecular and pharmacological approaches to optimize neural repair and plasticity in the injured spinal cord.



Dr. Rita Kandel is a Professor in the Department of Laboratory Medicine and Pathobiology at the University of Toronto, and a practicing pathologist at Mount Sinai Hospital. Her research interests are in tissue engineering of articular skeletal tissues and the mechanisms regulating formation and degradation and these tissues.



Dr. Stephen Lewis is an attending Orthopaedic physician at the Toronto Western Hospital and Hospital for Sick Children with a subspecialty in spinal deformity and revision spinal surgeries.

Dr. Todd Mainprize is a Neurosurgeon who trained at the University of Toronto and who currently works at Sunnybrook Health Science Centre. He works with traumatic spinal injuries and degenerative spinal problems.



Dr. Barry Malcolm has expertise in spinal diseases and disorders and musculoskeletal disability. He is currently an Assistant Professor of Surgery at the University of Toronto and active staff at Sunnybrook Health Sciences Centre.



Dr. Eric Massicotte is an Assistant Professor in the Department of Surgery at the University of Toronto, 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 guidelines, and medical education.



Dr. H. Malempati is a senior Orthopaedic surgery resident currently enrolled in the Surgeon-Scientist Program at the University of Toronto. He is pursuing a Masters of Science (Postgraduate Medical Education and Clinical Outcomes) degree at the Institute of Medical Sciences. His research is focused on spine surgical fellowship education, with particular emphasis on educational objectives at the curriculum level, and a comparison of current surgical practice between orthopaedic and neurosurgical spine surgeons. His primary supervisor is Dr. Albert Yee at the Sunnybrook Health Sciences Centre.



Dr. Cindi Morshead is currently an Assistant Professor in the Department of Surgery at the University of Toronto. Her research focuses on neural stem cells and their use in to treat neurodegenerative disease and promote tissue repair in models of stroke and spinal cord injury.

Dr. Issac Moss is a fourth year resident in U of T's Orthopaedic Surgery residency program. He recently completed a Masters of Applied Science through the Surgeon Scientist program focused tissue engineering of the intervertebral disc.



Dr. Farhad Pirouzmand is on the neurosurgical faculty at the University of Toronto. Prior to this, he was the Program Director of Neurosurgery at the University of Saskatchewan. His main areas of interest are skull base, spine, and orbital reconstructive surgery.



Dr. Raj Rampersaud received his Orthopaedic and Neurosurgical spinal fellowship training was at the University of Western Ontario and University of Tennessee respectively. He has been on staff at UHN since 1999. His academic interests are in the clinical outcomes research including adverse events and minimally invasive spinal surgery.



Dr. Arjun Sahgal completed his residency at the University of Toronto and a Spine Radiosurgery fellowship at the University of California, San Francisco. He currently is an assistant professor at the Princess Margaret Hospital and Sunnybrook Health Sciences Centre and leads the University of Toronto Spine Radiosurgery program.



Dr. Molly Shoichet holds the Canada Research Chair in Tissue Engineering and is a Professor of Chemical Engineering & Applied Chemistry, Chemistry and Biomaterials & Biomedical Engineering at the University of Toronto. She is an expert in the study of Polymers for Regeneration with an interest in drug delivery and scaffold design.



Dr. Alexander Velumian is an Assistant Professor in Departments of Surgery and Physiology of University of Toronto and a Research Neuroscientist in the Division of Neurosurgery of the Toronto Western Hospital. His current research is focused on using electrophysiological techniques to examine the cellular mechanisms of spinal cord injury.



Dr. James G. Wright is Chief of Perioperative Services, and Surgeon-in-Chief, Department of Surgery at The Hospital for Sick Children (SickKids). Dr. Wright also remains an active researcher, focusing on the systematic study of characteristics of health and disease and outcomes of treatment modalities in children.



Dr. Cari Whyne is an Associate Professor in the Department of Surgery, the Institute of Biomaterials and Biomedical Engineering and the Institute of Medical Sciences at the University of Toronto. She is the Director of the Holland Musculoskeletal Research Program, as well as the Director of the Orthopaedic Biomechanics Laboratory, both at Sunnybrook Health Sciences Centre.



Dr. Albert Yee is an Associate Professor at the University of Toronto and joined the staff of Sunnybrook Health Sciences Centre in 2001. Dr. Yee has a clinical interest in adult degenerative and metastatic spinal disease and a translational research interest in new therapies for the treatment of adult degenerative and vertebral metastatic disease.



Dr. Ali Zahrai is a senior Orthopaedic surgery resident presently enrolled in the Surgeon Scientist Program and completing his Master of Science degree at the Department of Health Policy, Management and Evaluation. His curriculum focus is on health care strategy, management and efficiency. His research focus is on preoperative spine patient's information needs.



Dr. Reinhard Zeller is head of the Orthopaedic Spine Service at SickKids. His practice focuses on the care of children and adolescents with spinal deformities. His research interests are focused on developing innovative treatments for complex spinal deformities with a special interest in robotic implants and fusionless techniques.

ACKNOWLEDGEMENTS



Program Committee Members:

Dr. H. Ahn, Dr. L. da Costa, Dr. E. Dare, Dr. M. Erwin, Dr. M. Fehlings, Dr. J. Finkelstein, Dr. H. Ginsberg, Dr. G. Hawryluk, Ms. Connie Johnson, Dr. R. Kandel, Dr. S. Karimi, Dr. E. Massicotte, Dr. I. Moss, Dr. C. Whyne, Dr. A. Yee, Dr. A. Zahrai