

UNIVERSITY OF TORONTO SPINE PROGRAM

Fellow's Welcome Dinner & Research Update Meeting

Tuesday, October 2, 2023
6:00 - 9:00 PM

In Person at Stratus Restaurant
79 Wellington St W, 36th Floor, TD South Tower, Toronto M5K 1J5.

Zoom Option also available
Zoom Link [HERE](#)
Meeting ID: 845 5627 8574, Passcode: 90777

University of Toronto Spine Program

Fellows Welcome Dinner & Research Update Meeting

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Agenda

6:00 pm:	Reception	
6:30 pm:	Welcome Remarks and introduction to U of T Spine Program	Prof. Michael Fehlings & Prof. Albert Yee (U of T Spine Program Co-Directors)
6:40 pm:	Introduction to fellows and all	all
6:50 pm:	Introduction to Research	Dr. Carlo Ammendolia & Dr. Karl Zabjek (Co-Chairs- Research update meeting)
	Appetizers @ 7pm	
	Basic Science Research Presentation 5 – 7 Min Max, followed by 3-5 Min for Q&A	
7:00 pm	<i>Promoting the Differentiation of Neural Progenitor Cells into Oligodendrocytes Through the Induction of Olig2 Expression</i>	Katarzyna Pieczonka
7:12 pm	<i>Subcommissural organ-derived peptide promotes functional recovery and enhances tissue repair in a rat cervical spinal cord injury model</i>	Nayaab Punjani
7:24 pm	<i>Bridging the Gap: Engineered Neural Stem Cells for the Injured Spinal Cord</i>	Nadine Tan
7:34 pm	Break (10 min) (Main Course at 7:30pm)	
	Basic Science Research Presentation 5 – 7 Min Max, followed by 3-5 Min for Q&A	
7:44 pm	<i>“A Prospective, Observational, Multicenter Study Assessing Functional Improvements After Multilevel Fusion for Adult Spinal Deformity (ASD): 5 Year Follow Up Results”</i>	Aditya Raj
7:58 pm	<i>Stereotactic Body Radiotherapy (SBRT) for Sacral Metastases: Deviation from Recommended Target Volume Delineation Increases the Risk of Local Failure</i>	Daniel Palhares
8:10 pm	<i>Development of a patient-centered cervical myelopathy severity index: measurement property testing, item generation, and item reduction</i>	Armaan K Malhotra
8:22 pm	<i>Independence of bowel and bladder function after complete ASIA An acute traumatic spinal cord injury: a longitudinal analysis of prospective, multicenter data in 319 patients</i>	Alex Beomju Bak
8:34 pm	Wrap up and Dessert	

Basic Science Research Presenters



Katarzyna Pieczonka completed her undergraduate studies in Neuroscience and Physiology at the University of Toronto before joining the Fehlings lab as a graduate student. Currently, Katarzyna is a 5th year PhD student at the Institute of Medical Science. Her project focuses on developing and characterizing oligodendrogenically-biased neural progenitor cells as a regenerative therapy for spinal cord injury.



Nayaab Punjani is a 4th year PhD student at the Institute of Medical Science in Dr. Michael Fehlings' Lab at the Krembil Research Institute, University Health Network. She completed her Honours Bachelor of Science at the University of Toronto Scarborough with a double major in Biochemistry Co-op and Mental Health Studies, along with a French minor. She was the recipient of the Frederick Banting and Charles Best Canada Graduate Scholarship-Master's (CGS-M) in 2021. Her research employs the use of a rat cervical traumatic SCI model to assess functional recovery and tissue repair following the administration of a neuroprotective drug termed NX. The goal being to have a drug therapy that targets the secondary injury cascade following cervical traumatic spinal cord injury, enhancing endogenous neural repair, and improving patient quality of life and autonomy.



Nadine Tan (MScBMC) is a medical illustrator and animator, and a recent graduate of the Biomedical Communications Masters Program at the University of Toronto. Nadine works with scientists to translate their ideas and research into captivating and accurate visuals, such as graphical abstracts, paper figures, infographics, and 2D/3D animations. She has background in Biochemistry (BSc) and research experience at York University and SickKids Hospital. Nadine collaborated with the Fehlings lab for her Masters Research Project this year, and produced an animation describing the use of engineered neural stem cells to treat the injured spinal cord.

Clinical Research



Dr. Aditya Raj is an Orthopaedic spine surgeon trained in India. He has completed his spine fellowship from the University of Toronto at the Toronto Western Hospital. He attended medical school with Maharashtra University of Health Sciences in India and graduated top of his class. He further completed his Orthopaedic surgery training at Seth G.S Medical College and King Edward Memorial Hospital in Mumbai and was awarded a gold medal for finishing top of his class. He completed a spine fellowship from Stavva Spine Hospital and Research Institute, India in adult and pediatric spine surgery. He was also awarded Asia Pacific Spine Fellowship and attended a fellowship program directed at pediatric and adult spine deformities at Samsung Medical Centre in Seoul, South Korea. He was also trained in Uniportal and Biportal Endoscopic Spine Surgery in South Korea. His research interests include spinal deformities, craniovertebral junction diseases, spinal infections.



Dr. Daniel Palhares is a Radiation Oncology fellow at Sunnybrook Health Sciences Centre, with training centered on the treatment of central nervous system, breast, and gastrointestinal malignancies. His research is focused on central nervous system and Spine SBRT under the supervision of Dr. Sahgal.



Dr. Armaan Malhotra is a current fourth year neurosurgical resident at the University of Toronto. He is pursuing a PhD through the Institute of Health Policy, Management and Evaluation focused on clinical epidemiology, observational studies and neurotrauma outcomes with Drs Jeff Wilson, Avery Nathens and Christopher Witw.



Alex Beomju Bak is a fourth-year medical student at University of Toronto. During medical school, he also pursued a master in biomedical engineering. His academic interests include biomedical data science and product development. In his free time, he likes to ski, scuba dive, and team trivia.

Program Co-Directors



Dr. Michael Fehlings is a Professor of Neurosurgery, Co-Director of the Spine Program and Vice Chairman (Research) in the Department of Surgery at the University of Toronto. He holds the Halbert Chair in Neural Repair and Regeneration and combines an active clinical practice in complex spinal surgery at the Toronto Western Hospital with a translationally oriented research program focused on discovering novel treatments for the injured brain and spinal cord. He has authored over 950 peer-reviewed articles (h-index 94) chiefly in the area of central nervous system injury and complex spinal surgery. His work has been featured in *Nature*, *Nature Neuroscience*, *Science Translational Medicine*, *Nature Reviews Neurology*, *JAMA*, *Lancet Neurology*, and the *New England Journal of Medicine*. Dr. Fehlings has held a number of prominent leadership roles, including current President of the International Neurotrauma Society, the Chair of the AO Foundation Clinical Investigation and Documentation Advisory Committee, past Chair of the AOSpine International Spinal Cord Injury Knowledge Forum, past President of the Cervical Spine Research Society, and leader of several international clinical research trials. Dr. Fehlings is a Fellow of the Royal Society (Canada) and a Fellow of the Canadian Academy of Health Sciences. He has received numerous international recognitions including the Royal College Gold Medal, Olivecrona Award, Ryman Prize, Magnus Medal in Neurosurgery and the Jonas Salk Award.



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 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.

Research Update Meeting (Co-Chairs)



Dr. Carlo Ammendolia is the Director of the Spine Clinic and the Spinal Stenosis Program at the Rebecca MacDonald Centre for Arthritis and Autoimmune Diseases at Mount Sinai Hospital. He received his DC degree from the Canadian Memorial Chiropractic College in Toronto, his MSc degree in Clinical Epidemiology and Health Care Research and his PhD in Clinical Evaluative Sciences from the University of Toronto. Dr. Ammendolia is an Assistant Professor in the Institute of Health Policy, Management and Evaluation, the Department of Surgery and the Institute of Medical Sciences at the University of Toronto.

Dr. Ammendolia has been in clinical practice for 40 years and combines clinical practice, research, and teaching in the areas of non-operative treatment of mechanical, degenerative and inflammatory spinal disorders with a special interest in degenerative spinal stenosis.



Dr. Karl Zabjek is an Associate Professor in the Department of Physical Therapy and has extensive applied expertise within the field of Clinical Biomechanics. Dr. Zabjek developed his knowledge of Biomechanics within the context of the Undergraduate Kinesiology program at the University of Waterloo, and learned to apply this knowledge to develop clinically relevant research questions that address the contemporary issues encountered by individuals living with disability and neuromusculoskeletal conditions. Dr. Zabjek developed this knowledge and expertise within the context of a Masters in Clinical Science at the University of Sherbrook and a Doctorate in Biomedical Science in the Faculty of Medicine at the University of Montreal. Dr. Zabjek's current research is focused on the development of clinical models to assess the structure and function of the spine in children and youth living with a Paediatric Spinal Deformity. A secondary focus of his research aims to understand the multiple determinants of mobility in individuals living with a Disability. This program of research is conducted in collaboration with researchers from the Rehabilitation Sciences Sector at the University of Toronto, the Bloorview Research Institute, The Hospital for Sick Children, and the Toronto Rehabilitation Institute.

Organizing Team



Nadia Jaber is the Manger of the University of Toronto Spine Program. She manages the Program's operations, communications, and fundraise. She plans and organizes the Program's education and knowledge translations platforms. Nadia completed her Master of Information Studies at the University of Toronto, and obtained trainings in Entrepreneurship Essentials and in Leadership Principles from Harvard Business School – Online. She continues to integrate her education, knowledge and expertise in information, communication and technology to enhance the Program's experience in collaboration, education, teaching, and community outreach and advocacy.



Delphine Li is a third-year HBSc candidate double-majoring in Neuroscience and English at the University of Toronto. She has received both a University of Toronto Scholar award and the Dean's List Scholar designation. As an aspiring medical student, she joined the U of T Spine Program as a Program Volunteer to gain exposure to spine disorders and spine care delivery and learn more about current city-wide spine research and education in the Program.

Delphine is excited to integrate her multidisciplinary background in both the Life Sciences and the Humanities to assist in planning and organizing knowledge translation activities at in the U of T Spine Program

Acknowledgement



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<https://surgery.utoronto.ca/spine-program>



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