

NEUROSURGE

MONTHLY UPDATES FROM THE CHAIRMAN'S OFFICE UNIVERSITY OF TORONTO, DIVISION OF NEUROSURGERY

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FROM THE CHAIRMAN'S OFFICE

Phase III trial of neuroprotective drug NA-1 for stroke

Michael Tymianski was interviewed by the Toronto Star on a ground-breaking drug he developed to treat stroke. The results of the Phase III trial of nerinetide (NA-1) were published in The Lancet and is featured as a PDF of the Month. The story can be accessed at:

<https://www.thestar.com/news/gta/2020/02/20/during-a-stroke-time-is-brain-this-toronto-doctors-drug-shown-to-buy-more-time-for-patients.html>



Order of Hockey Recipients

Charles Tator received the Order of Hockey from Hockey Canada for his work on combatting concussions and spinal cord injuries in the sport. Fellow honorees this year include former Stanley Cup Champion, author, and Member of Parliament Ken Dryden, and former NHL player Sheldon Kennedy. An article and video of the press conference featuring a phone interview with Dr. Tator can be accessed at: <https://www.tsn.ca/ken-dryden-sheldon-kennedy-and-dr-charles-tator-named-to-order-of-hockey-in-canada-1.1441030>



HONORS, GRANTS AND AWARDS



Peter Dirks received a five-year, \$956,250 grant from the Canadian Institutes of Health Research for the work entitled “Modeling brain cancer in regionally defined human neural stem cell system.”

Peter Dirks also received a Canadian Cancer Society Impact Grant valued at \$1,500,000 (with \$100,000 per year to Dr. Dirks) for the work entitled “Reimagining glioblastoma as a consequence of aberrant neural tissue repair.”



Jose Danilo Diestro (INR fellow, St. Michael’s Hospital) received the Paul Dudley White International Scholar Award at the International Stroke Conference 2020, which recognizes the highest-ranked abstract from each country. He was also the winner of International Stroke Conference Quizbee: Game of Strokes.



Jetan Badhiwala (PGY4; supervisor: Dr. Michael Fehlings) received the Journalistic and Neurosurgical Excellence (J.A.N.E.) Award from the AANS/CNS Joint Section on Disorders of the Spine and Peripheral Nerves for the work entitled “A Novel Method to Classify Patients with Cervical Incomplete SCI based on Potential for Recovery: A Trajectory Analysis.”

Jetan Badhiwala was also the regional winner (Region 12) of the American College of Surgeons Committee on Trauma (COT) competition and was selected as a finalist in the North America-wide competition for the work entitled “Early versus Late Surgical Decompression for Acute Spinal Cord Injury: A Pooled Analysis of 1,548 Patients.”

PUBLICATIONS

Almog IF, Chen FD, Senova S, Fomenko A, Gondard E, Sacher WD, Lozano AM, Poon JKS. Full-field swept-source optical coherence tomography and neural tissue classification for deep brain imaging. *J Biophotonics*. 2020 Feb;13(2):e201960083.

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Badhiwala JH, Ellenbogen Y, Khan O, Nouri A, Jiang F, Wilson JRF, Jaja B, Witiw CD, Nassiri F, Fehlings MG, Wilson JR. Comparison of the Inpatient Complications and Health Care Costs of Anterior versus Posterior Cervical Decompression and Fusion in Patients with Multilevel Degenerative Cervical Myelopathy: A Retrospective Propensity Score-Matched Analysis. *World Neurosurg*. 2020 Feb;134:e112-e119.

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Dmytriw AA, Salem MM, Yang VXD, Krings T, Pereira VM, Moore JM, Thomas AJ. Endosaccular Flow Disruption: A New Frontier in Endovascular Aneurysm Management. *Neurosurgery*. 2020 Feb 1;86(2):170-181.

Hachem LD, Mothe AJ, Tator CH. Unlocking the paradoxical endogenous stem cell response after spinal cord injury. *Stem Cells*. 2020 Feb;38(2):187-194.

Hill MD, Goyal M, Menon BK, Nogueira RG, McTaggart RA, Demchuk AM, Poppe AY, Buck BH, Field TS, Dowlathshahi D, van Adel BA, Swartz RH, Shah RA, Sauvageau E, Zerna C, Ospel JM, Joshi M, Almekhlafi MA, Ryckborst KJ, Lowerison MW, Heard K, Garman D, Haussen D, Cutting SM, Coutts SB, Roy D, Rempel JL, Rohr AC, Iancu D, Sahlas DJ, Yu AXY, Devlin TG, Hanel RA, Puetz V, Silver FL, Campbell BCV, Chapot R, Teitelbaum J, Mandzia JL, Kleinig TJ, Turkel-Parrella D, Heck D, Kelly ME, Bharatha A, Bang OY, Jadhav A, Gupta R, Frei DF, Tarpley JW, McDougall CG, Holmin S, Rha JH, Puri AS, Camden MC, Thomalla G, Choe H, Phillips SJ, Schindler JL, Thornton J, Nagel S, Heo JH, Sohn SI, Psychogios MN, Budzik RF, Starkman S, Martin CO, Burns PA, Murphy S, Lopez GA, English J, Tymianski M; ESCAPE-NA1 Investigators. Efficacy and safety of nerinetide for the treatment of acute ischaemic stroke (ESCAPE-NA1): a multicentre, double-blind, randomised controlled trial. *Lancet*. 2020 Feb 20.

Jabarkheel R, Amayiri N, Yecies D, Huang Y, Toescu S, Nobre L, Mabbott DJ, Sudhakar SV, Malik P, Laughlin S, Swaidan M, Al Hussaini M, Musharbash A, Chacko G, Mathew LG, Fisher PG, Hargrave D, Bartels U, Tabori U, Pfister SM, Aquilina K, Taylor MD, Grant GA, Bouffet E, Mankad K, Yeom KW, Ramaswamy V. Molecular correlates of cerebellar mutism syndrome in medulloblastoma. *Neuro Oncol*. 2020 Feb 20;22(2):290-297.

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Conklin HM, Chintagumpala M, Bouffet E, Mabbott D. Superior Intellectual Outcomes After Proton Radiotherapy Compared With Photon Radiotherapy for Pediatric Medulloblastoma. *J Clin Oncol*. 2020 Feb 10;38(5):454-461.

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Khan O, Badhiwala JH, Witiw CD, Wilson JR, Fehlings MG. Machine Learning Algorithms for Prediction of Health-Related Quality-of-Life after Surgery for Mild Degenerative Cervical Myelopathy. *Spine J*. 2020 Feb 8.

Kumar A, Dmytriw AA, Salem MM, Kuhn AL, Phan K, Bharatha A, Spears J, Thomas A, Puri A, Marotta TR. Reconstructive vs Deconstructive Endovascular Approach to Intracranial Vertebral Artery Aneurysms: A Multicenter Cohort Study. *Neurosurgery*. 2020 Feb 5.

McCadden MD, Baba A, Saha A, Ahmad S, Boparai K, Fadaiefard P, Cusimano MD. Ethical concerns around use of artificial intelligence in health care research from the perspective of patients with meningioma, caregivers and health care providers: a qualitative study. *CMAJ Open*. 2020 Feb 18;8(1):E90-E95.

McKinnon C, De Snoo ML, Gondard E, Neudorfer C, Chau H, Ngana SG, O'Hara DM, Brotchie JM, Koprach JB, Lozano AM, Kalia LV, Kalia SK. Early-onset impairment of the ubiquitin-proteasome system in dopaminergic neurons caused by α -synuclein. *Acta Neuropathol Commun*. 2020 Feb 14;8(1):17.

Mithani K, Wong SM, Mikhail M, Pourmotabbed H, Pang E, Sharma R, Yau I, Ochi A, Otsubo H, Snead OC, Donner E, Go C, Widjaja E, Babajani-Feremi A, Ibrahim GM. Somatosensory evoked fields predict response to vagus nerve stimulation. *Neuroimage Clin*. 2020 Feb 4;26:102205.

Müsch K, Humberger K, Tan KM, Valiante TA, Honey CJ. Transformation of speech sequences in human sensorimotor circuits. *Proc Natl Acad Sci U S A*. 2020 Feb 11;117(6):3203-3213.

Nassiri F, Zadeh G. How should we manage incidental meningiomas? *Neuro Oncol*. 2020 Feb 20;22(2):173-174.

Nguyen NQ, Cardinell J, Ramjist JM, Lai P, Dobashi Y, Guha D, Androustos D, Yang VXD. An augmented reality system characterization of placement accuracy in neurosurgery. *J Clin Neurosci*. 2020 Feb;72:392-396.

Orru E, Rice H, De Villiers L, Klostranec JM, Wakhloo AK, Coon AL, Radovanovic I, Kortman H, Bhatia KD, Krings T, Pereira VM. First clinical experience with the new Surpass Evolve flow diverter: technical and clinical considerations. *J Neurointerv Surg.* 2020 Feb 12.

Pasarikovski CR, Keith J, da Costa L, Ramjist J, Dobashi Y, Black SE, Yang VXD. Optical coherence tomography imaging after endovascular thrombectomy: a novel method for evaluating vascular injury in a swine model. *J Neurosurg.* 2020 Feb 14:1-8.

Ren Y, Tan Q, Heath K, Wu S, Wilson JR, Ren J, Shriwas P, Yuan C, Ngoc Ninh T, Chai HB, Chen X, Soejarto DD, Johnson ME, Cheng X, Burdette JE, Kinghorn AD. Cytotoxic and non-cytotoxic cardiac glycosides isolated from the combined flowers, leaves, and twigs of *Streblus asper*. *Bioorg Med Chem.* 2020 Feb 15;28(4):115301.

Rocque BG, Weprin BE, Blount JP, Hopson BD, Drake JM, Hamilton MG, Williams MA, White PH, Orrico KO, Martin JE. Health care transition in pediatric neurosurgery: a consensus statement from the American Society of Pediatric Neurosurgeons. *J Neurosurg Pediatr.* 2020 Feb 14:1-9.

Tohyama S, Hung PS, Cheng JC, Zhang JY, Halawani A, Mikulis DJ, Oh J, Hodaie M. Trigeminal neuralgia associated with a solitary pontine lesion: clinical and neuroimaging definition of a new syndrome. *Pain.* 2019 Dec 9.

Tohyama S, Walker MR, Sammartino F, Krishna V, Hodaie M. The Utility of Diffusion Tensor Imaging in Neuromodulation: Moving Beyond Conventional Magnetic Resonance Imaging. *Neuromodulation.* 2020 Feb 11.

Vaz E, Shaker RR, Cusimano MD. A geographical exploration of environmental and land use characteristics of suicide in the greater Toronto area. *Psychiatry Res.* 2020 Feb 1:112790.

Wang S, Weil AG, Ibrahim GM, Fallah A, Korman B, Ragheb J, Bhatia S, Duchowny M. Surgical management of pediatric patients with encephalopathy due to electrical status epilepticus during sleep (ESES). *Epileptic Disord.* 2020 Feb 7.

Warsi NM, Tailor J, Coulter IC, Shakil H, Workewych A, Haldenby R, Breitbart S, Strantzas S, Vandenberk M, Dewan MC, Ibrahim GM. Selective dorsal rhizotomy: an illustrated review of operative techniques. *J Neurosurg Pediatr.* 2020 Feb 7:1-8.

VISITING PROFESSORSHIPS

Mojgan Hodaie was an Invited Speaker at the International Conference on Psychosurgery. “Advanced imaging in psychiatric neurosurgery”. Feb 6-7, 2020. Novosibirsk, Russia.

Abhaya Kulkarni was the Keynote Lecturer at the Indian Society of Pediatric Neurosurgery Annual Conference. “Endoscopic third ventriculostomy in children.” February 5-8, 2020. Kolkata, India.

Andres Lozano was an Invited Speaker at the International Conference on Psychosurgery. 1) “Medicolegal Aspects and Regulatory Issues of Psychosurgery”; 2) (Plenary) “Surgical Options for Correction of Higher Brain Functions”. February 6-7, 2020. Novosibirsk, Russia.

Andres Lozano was an Invited Speaker at the 3rd Pan American Parkinson’s Disease and Movement Disorders Congress. “Transcranial Focused Ultrasound: Is This the Next Break-Through Treatment for Parkinson’s Disease?” February 14-17, 2020. Miami, Florida.

Andres Lozano was an Invited Lecturer at the 33rd Annual Neurosurgery in the Rockies Conference. “Electricity and sound to treat brain disorders”. February 23-25, 2020. Beaver Creek, Colorado.

James Rutka was an Invited Speaker at the American Society of Pediatric Neurosurgeons (ASPN). “Utility of Lower Species Modeling of Human Brain Tumours: Identification of new therapeutic targets.” January 26-31, 2020. Nassau, Bahamas.

James Rutka was an Invited Speaker at the Texas Children’s Hospital. “Late Career Transitioning in Surgery: There comes a time”. February 20-21, 2020. Houston, TX.

Trainees:

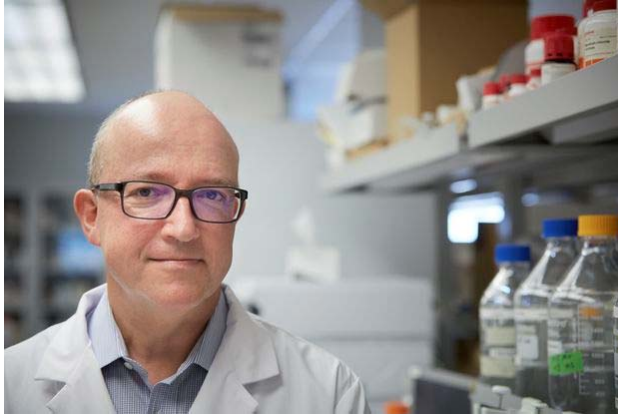
Christopher Pasarikovski (PGY4; supervisor: Dr. Victor Yang) was a Guest Speaker at the International Stroke Conference 2020. “Optical Coherence Tomography Imaging in Acute Ischemic Stroke: Preliminary Animal and Human Results.” February 19-21, 2020. Los Angeles, California.

Jose Danilo Diestro (INR fellow, St. Michael’s Hospital) was an Invited Speaker at the International Stroke Conference 2020. “Endovascular thrombectomy for large vessel ischemic stroke patients with low ASPECTS: a systematic review and meta-analysis.” February 19-21, 2020. Los Angeles, California.

IN THE MEDIA

Michael Tymianski's Phase III trial of Nerinetide was featured by The Globe and Mail. The piece can be accessed at:

<https://www.theglobeandmail.com/canada/article-a-pivotal-moment-canadian-developed-drug-shows-dramatic-outcomes-in/>



Laboratory Equipment interviewed Vitor Mendes Pereira on his team's research into treating brain aneurysms with robots to improve precision. The piece can be accessed at:

<https://www.laboratoryequipment.com/561100-For-the-First-Time-Surgeons-Successfully-Treat-Brain-Aneurysms-Using-a-Robot/>



PDFs OF THE MONTH

Badhiwala JH, Ellenbogen Y, Khan O, Nouri A, Jiang F, Wilson JRF, Jaja B, Witiw CD, Nassiri F, Fehlings MG, Wilson JR. Degenerative cervical myelopathy — update and future directions. *Nat Rev Neurol* 16, 108–124 (2020).

Hachem LD, Mothe AJ, Tator CH. Unlocking the paradoxical endogenous stem cell response after spinal cord injury. *Stem Cells*. 2020 Feb;38(2):187-194.

Hill MD, Goyal M, Menon BK, Nogueira RG, McTaggart RA, Demchuk AM, Poppe AY, Buck BH, Field TS, Dowlathshahi D, van Adel BA, Swartz RH, Shah RA, Sauvageau E, Zerna C, Ospel JM, Joshi M, Almekhlafi MA, Ryckborst KJ, Lowerison MW, Heard K, Garman D, Haussen D, Cutting SM, Coutts SB, Roy D, Rempel JL, Rohr AC, Iancu D, Sahlas DJ, Yu A YX, Devlin TG, Hanel RA, Puetz V, Silver FL, Campbell BCV, Chapot R, Teitelbaum J, Mandzia JL, Kleinig TJ, Turkel-Parrella D, Heck D, Kelly ME, Bharatha A, Bang OY, Jadhav A, Gupta R, Frei DF, Tarpley JW, McDougall CG, Holmin S, Rha JH, Puri AS, Camden MC, Thomalla G, Choe H, Phillips SJ, Schindler JL, Thornton J, Nagel S, Heo JH, Sohn SI, Psychogios MN, Budzik RF, Starkman S, Martin CO, Burns PA, Murphy S, Lopez GA, English J, Tymianski M; ESCAPE-NA1 Investigators. Efficacy and safety of nerinetide for the treatment of acute ischaemic stroke (ESCAPE-NA1): a multicentre, double-blind, randomised controlled trial. *Lancet*. 2020 Feb 20.

Tohyama S, Hung PS, Cheng JC, Zhang JY, Halawani A, Mikulis DJ, Oh J, Hodaie M. Trigeminal neuralgia associated with a solitary pontine lesion: clinical and neuroimaging definition of a new syndrome. *Pain*. 2019 Dec 9.

UPCOMING MEETINGS

April 2020

American Association of Neurological Surgeons (AANS) 88th Annual Meeting. Boston, Massachusetts. Apr 25-29, 2020. <https://www.aans.org/Annual-Scientific-Meeting/2020>

May 2020

Society of Neurological Surgeons (SNS) 2020 Annual Meeting. Philadelphia, Pennsylvania. May 30-Jun 2, 2020. https://www.societyns.org/meeting_info.html

June 2020

Canadian Neurological Sciences Federation (CNSF) 55th Annual Congress. Banff, Alberta. Jun 7-10, 2020. <http://congress.cnsfederation.org/>

RESIDENTS' CORNER

Brain School Schedule - thebrainschool.net

March 2020

Friday, March 6, 2020

Sickkids, Roy Hill Wing, Room 1527

0900-1200

TOPIC: *Epilepsy*

9-10 Dr. George Ibrahim: Resective epilepsy surgery

10-11 Dr. Han Yan: Palliative Epilepsy Surgery

11-12 Dr. Hrishi Suresh: Brachial plexus injury and surgical treatment in children

Friday, March 13, 2020

Sickkids, Roy Hill Wing, Room 1527

0900-1200

TOPIC: *Epilepsy*

9-10 Dr. James Rutka: Hemispheric syndromes

10-11 Dr. Cristina Go: Medical management of childhood epilepsy

11-12 Dr. Lily Nazrati: Neuropathology of epilepsy in children

Friday, March 20, 2020

Sickkids, Roy Hill Wing, Room 1527

0900-1200

Topic: *Epilepsy*

9-10: (TBD) Dr. Elysa Widjaja: Imaging of epilepsy in children

10-12: Finance Seminar

Guest Speaker: Ms. Elizabeth Karlinsky, CIM

Early Career Specialist

MD Financial Management

Friday, March 27, 2020

Sickkids, Roy Hill Wing, Room 1527

0900-1200

Topic: *Spasticity/ Functional*

Dr. George Ibrahim: Hypertonia : Spasticity

Dr. George Ibrahim: Hypertonia : Dystonia

Dr. George Ibrahim: Neuromodulation in children

RESIDENCY PROGRAM COMMITTEE MEETINGS

Monday, March 30, 2020, 7-8 a.m., TWH WW4-438 (library)

NEUROSURGERY CABINET MEETING

Tuesday, March 24, 2020, 7-8 a.m., TWH WW4-438 (library)