

Department of Surgery's 51st Gallie Day Friday, May 2, 2025 | MaRS Auditorium

The Impact of Artificial Intelligence and Machine Learning on the Art and Science of Surgery

Event Chair: Dr. Michael Fehlings, Vice Chair Research

Session Coordinators: Dr. Amin Madani, Dr. Yosef Ellenbogen, Dr. Asha Behdinan, and Renata Musa

7:30 - 8:00 BREAKFAST

8:00 - 8:10 Opening Remarks: Dr. Michael G. Fehlings, Dr. Carol Swallow

GALLIE-BATEMAN, MCMURRICH AND TRANSLATIONAL RESEARCH PRESENTATIONS | Session Chair: Dr. Heather Baltzer

8:10 - 8:25 **Tiam Feridooni**, Arshia P. Javidan, Asha Behdinan, Daniyal N. Mahmood, Polycronis P. Akouris, Hiran Feridooni, Andrew Dueck, Mark Wheatcroft, David Szalay: "Domain-Specific Artificial Intelligence: VASC.AI's Impact on Vascular Surgery and Education"

8:25 - 8:40 **Elliott K. Yee (SSTP)**, Stephanie A. Mason, Laura C. Rosella, Liisa Jaakkimainen, Brandon M. Zagorski, Darby Little, Gemma Postill, Avery B. Nathens, Bourke W. Tillmann, Barbara Haas: "Primary Care Access is Associated with Improved Long-Term Survival After Severe Traumatic Injury"

8:40 - 8:55 **Alyona Ivanova**, Taylor Wilson, Kimia Ghannad-Zadeh, Esmond Tse, Megan Wu, Sunit Das: "Lomitapide enhances cytotoxic effects of temozolomide in chemo-resistant glioblastoma"

8:55 - 9:10 **Jethro C.C. Kwong (SSTP)**, Zizo Al-Daqqaq, Yashan Chelliahpillai, Soomin Lee, Kellie Kim, Maximiliano Ringa, Andrew Feifer, Katherine Lajkosz, Marian S. Wettstein, Amy Chan, Taewon Lee, Myky Nguyen, Wassim Kassouf, Peter C. Black, Rodney H. Breau, Michele Lodde, Adrian Fairey, Jean-Baptiste Lattouf, Claudio Jeldres, Ricardo Rendon, Nimira Alimohamed, Neil E. Fleshner, Romain Diamand, Paolo Gontero, Richard J. Sylvester, Bas W.G. van Rhijn, Ashish M. Kamat, Alistair E.W. Johnson, Alexandre R. Zlotta, Girish S. Kulkarni on behalf of the PROGRxN-BCa consortium: "An artificial intelligence-based model to predict progression risk in non-muscle invasive bladder cancer (PROGRxN-BCa) and improve substratification of intermediate- and high-risk patients: an international model development and evaluation study"

9:10 - 9:25 **Grace S Lee**, Derrick Y Tam, Dominique Vervoort, Shun Fu Lee, Katheryn Brady, Richard Whitlock, Emilie Belley-Cote, Andre Lamy, PJ Devereaux, Stephen E. Fremes: "Associations between High-Sensitivity Cardiac Troponin I and 30-day Mortality following Off-pump and On-pump Coronary Artery Bypass Surgery: A Subanalysis of the VISION Cardiac Surgery Study"

9:25 - 9:40 **Armaan K Malhotra (SSTP)**, Avery B Nathens, Husain Shakil, Vishwathsen Karthikeyan, Christopher S Lozano, Jetan H Badhiwala, Francois Mathieu, Benjamin Davidson, Abhaya V Kulkarni, Christopher D Witiwi, Kevin E Thorpe, Jefferson R Wilson: "Latent home time trajectories for isolated moderate to severe traumatic brain injury survivors: a data-driven method identifies distinct outcome phenotypes"

9:40 - 10:40 E-POSTER PRESENTATIONS

10:40 - 11:40 GORDON MURRAY LECTURE

Professor Liane Feldman

- o Edward W. Archibald Professor and Chair of the Department of Surgery at McGill University.
- o Surgeon-in-chief at the McGill University Health Centre.

"Getting to mastery: The promise (and pitfalls) of Video based analytics in surgery"

11:40 - 12:30 BREAK FOR LUNCH

12:30 - 13:30 E-POSTER PRESENTATIONS

GALLIE-BATEMAN, MCMURRICH AND TRANSLATIONAL RESEARCH PRESENTATIONS | Session Chair: Dr. Avery Nathens

13:30 - 13:45 **Whitney Quong (SSTP)**, Cornelia Borkhoff, Aaron Drucker, Joel Fish: "What it Means to Have a Scar: Insights from 20,000 People"

13:45 - 14:00 **Abby McCaig**, Xuanzi Zhou, Thomas Borrillo, Marcelo Cypel, Shaf Keshavjee, Andrew Sage, Mingyao Liu: "Endothelin-1 as a Biomarker in Human Ex Vivo Lung Perfusate to Predict Donor Lung Suitability"

14:00 - 14:15 **Ben Li (SSTP)**, Badr Aljabri, Raj Verma, Derek Beaton, Naomi Eisenberg, Douglas S Lee, Duminda N Wijesundera, Thomas L Forbes, Ori D Rotstein, Charles de Mestral, Muhammad Mamdani, Graham Roche-Nagle, Mohammed Al-Omran: "Using Machine Learning to Predict Outcomes Following Open Abdominal Aortic Aneurysm Repair"

14:15 - 14:30 **Zhaoxun "Lorenz" Liu**, Jay Han, Barbara Haas, Matthew Guttman, Kameela Alibhai, Homer Tien, Jordyn Hurly, Joseph Sakran, Amin Madani: "Using Artificial Intelligence to Optimize Trauma Patient Transfer and Resource Utilization During Mass-Casualty Incidents: Development and Validation of a Novel Platform for Simulation Training"

14:30 - 14:45 **Karim Mithan (SSTP)**, Carolina Gorodetsky, Sara Breitbart, Han Yan, Kristina Zhang, Flavia Venetucci Gouveia, Nebras Warsi, Hrishikesh Suresh, Simeon M. Wong, Joeline Huber, Elizabeth N. Kerr, Abhaya V. Kulkarni, Margot J. Taylor, Louis Hagopian, Alfonso Fasan, George M. Ibrahim: "Deep Brain Stimulation of the Nucleus Accumbens for Severe Self-Injurious Behaviours in Children: A Phase I Pilot Trial"

14:45 - 15:00 **Arshia Javidan**, Tiam Feridooni, Paul Akouris, Kaan Balta, Allen Li, Daniyal Mahmood, Andrew Dueck, Mark Wheatcroft, David Szalay: "Development and Performance of VASC.AI: A Vascular Surgery AI Platform for Clinical Decision Support"

SYMPOSIUM: ARTIFICIAL INTELLIGENCE AND THE PRACTICE OF SURGERY: WHERE ARE WE NOW? WHERE ARE WE GOING?

Session Chair: Dr. Michael G. Fehlings, Vice Chair Research

15:00 - 15:15 **Dr. Amin Madani**: "Surgical Data Science: Promises, Perils and Realistic Expectations"

15:15 - 15:30 **Dr. Mamatha Bhat**: "Development of Multimodal AI tools to Personalize the Care of Transplant Recipients"

15:30 - 15:45 **Dr. Muhammad Mamdani**: "The Art and Science of Applying Artificial Intelligence to Clinical Practice"

15:45 - 16:00 **Dr. Laureen Hachem**: "Advanced AI analytics to track endogenous stem cells in the mammalian central nervous system: Implications for Regenerative Medicine"

16:00 - 16:05 **Dr. Jas Chahal**: "Innovation Entrepreneurship in Surgery - An Update"

16:05 - 16:30 Panel discussion

16:30 Wrap-up/Closing Remarks - Dr. Michael Fehlings & Dr. Carol Swallow

GORDON MURRAY BANQUET

Location: Baillie Court, Art Gallery of Ontario, 317 Dundas Street West Toronto, Ontario M5T 1G4

19:00 Cocktail Reception

20:00 Dinner & Awards Ceremony