

Montreal Child CDSS Congress (M3C)



May 16, CHU Sainte-Justine, Amphitheater 250

3175 Chemin Côte-Ste-Catherine, Montreal (Quebec) H3C 1C5, CANADA



Master of ceremony: Dr Erik Koomen et Dr Steven Schwartz

* **Students:** contenders for the audience award for the best oral presentation

Members of the jury: Michael Sauthier, André Dagenais PhD, Lama Seoud PhD

Montreal Child CDSS Congress (M3C), 16 MAY 2024

- **8h-8h30 AM**- Welcome coffee and networking
- **8h30-8h45 AM**- Opening session and welcome address (par Dr Philippe Jovet)

DESIGNING AND PROTECTING AI-READY DATA AND INFRASTRUCTURE

- **8h45-9h05 AM**- Leveraging NICU-PICU data for artificial intelligence deployment in the Dutch National NICU-PICU warehouse
Dr Erik Koomen, Wilhelmina Children's Hospital, UMC Utrecht
- **9h05-9h25 AM**- Use of language model in acute care in children
Dr Esli Osmanliu, Department of Pediatrics, Faculty of Medicine and Health Sciences, McGill University
- **9h25-9h45 AM**- Creation of a lung electrical impedance tomography database of children with respiratory distress
** Kevin Albert, MSc student, Université de Montréal*
- **9h45-10h05 AM**- Development and validation of an accelerated online training program in data science for the health science community
** Maxime Joly-Chevrier, MD student, Université de Montréal*

- **10h15-10h45 AM**- Coffee break

AI METHODS ADAPTED FOR CDSS DEDICATED TO CRITICALLY ILL CHILDREN

- **10h45-11h05 AM**- Incorporating social determinants of health to characterize latent factors driving poor outcomes in critically ill children
Dr Jocelyn Grunwell, Emory University, Children's Healthcare of Atlanta
- **11h05-11h25 AM**- AI and agingren
Simon Duchesne PhD, Quebec City Mental Health Institute, Université Laval
- **11h25-11h45 AM**- Generation of synthetic continuous biosignal, data in Intensive care units
** Marie-Jeanne Noel, MD student, Université de Montréal*
- **11h45-12h05 PM**- Elements associated with air leaks during non-invasive ventilation in pediatric intensive care
** Nathalie El-Hawli, MD student, Université de Montréal*

- **12h15-13h45 PM**- Lunch break

HOW CAN WE SHARE DATA, CHALLENGES AND PITFALLS

- **13h45-14h05 PM**- International data collaborative, experience from the european KidsBrainIT initiative
Dr Tsz-Yan Milly Lo, Consultant Paediatric Intensivist and Research Lead, University of Edinburgh
- **14h05-14h25 PM**- Challenges and pitfalls sharing data internationally
Dr Michael Sauthier, Pediatric Intensive Care Unit, CHU Sainte-Justine

AI AND OPTIMIZATION OF ACUTE CARE

- **14h30-14h50 PM**- Optimization of hospital organization using digitalized data
Louis Martin Rousseau PhD, Polytechnique Montreal
- **14h50-15h10 PM**- A transformation of a thermal image into an RGB image to counter visual occlusions and preserve patient identity
Lama Seoud PhD, Polytechnique Montréal
- **15h10-15h30 PM**- Development of an automated indicator for the quality of severe pediatric traumatic brain injury management
** Nadia Savy, PhD student, Université Clermont Auvergne*
- **15h10-15h30 PM**- Harnessing machine learning for PPG motion artifact detection: A comparative analysis with limited data
** Thanh Dung Le, Postdoctoral student, École de technologie supérieure*

- **16h-00-16h15 PM** - Coffee break
- **16h-15-17h45 PM** - Electronic poster session 'Flash com (see page 3)
- **17h45-18h00 PM**- Closing remarks
- **18h00 PM**- Cocktail





ELECTRONIC POSTER SESSION 'FLASH COM' (SCREEN 1)

16h15-17h45, Atrium 7 minutes presentation, 3 minutes question period

- **16h15-16h25 PM**- Uncertainty measurements in non-contact neonatal heart rate monitoring
Yasmina Souley Dosso, PhD, Carleton University (presented by James R. Green PhD)
- **16h25-16h35 PM**- Numerical attributes learning for cardiac failure diagnostic from clinical narratives – A lesa-camembert-bio approach
Acer Lompo, PhD student, École de technologie supérieure
- **16h35-16h45 PM**- Development of prediction models using machine learning techniques on physiological parameters for patient triage during disaster situations: VIMY multisystem case study
Santino Nanini, MSc student, Université de Montréal
- **16h45-16h55 PM**- Large Language Model Text Summarization for Communicating ML-derived Clinical Information to Parents and Clinicians
Toyin Adams, B.Eng. student, Carleton University (presented by James R. Green PhD)
- **16h55-17h15 PM**- Thermal image super-resolution for enhanced visual monitoring of patients in the PICU
Cyprien Arnold, MSc student, Université de Montréal

ELECTRONIC POSTER SESSION 'FLASH COM' (SCREEN 2)

16h15-17h45, Atrium 7 minutes presentation, 3 minutes question period

- **16h15-16h25 PM**- Transformer-based model for robust face detection of hospitalized infants and children using RGB and thermal images
Toufik Bouras, PhD student, École de technologie supérieure
- **16h25-16h35 PM**- Psychomotor agitation detection using deep learning
Sonja Dastani, PhD student, École de technologie supérieure
- **16h35-16h45 PM**- Video transformers for classification of infant routine care interventions
Igor Bogdanov, B.Eng. student, Carleton University (presented by James R. Green PhD)
- **16h45-16h55 PM**- Mobile laboratory research program: A dynamic tool for supporting artificial intelligence (AI) projects
Stéphane Bourassa, Postdoctoral student, Université de Montréal



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- **8h-8h30 AM**- Welcome coffee and networking
- **8h30-8h45 AM**- Opening session and welcome address (par Rita Noumeir, PhD)

VALUATION AND IMPLEMENTATION OF AI DRIVEN CDSS

- **8h45-9h05 AM**- A platform dedicated to the implementation of CDSS in PICUs
Dr Philippe Jouve, Pediatric Intensive Care Unit, CHU Sainte-Justine
- **9h05-9h25 AM**- How to optimize blood transfusion in acutely ill children: Blood Transfusion Advisor
Dr Jacques Lacroix, Pediatric Intensive Care Unit, CHU Sainte-Justine
- **9h25-9h45 AM**- rPPG estimation: Vision Transformer with 3D temporal central difference
* Mohamed Khalil Ben Salah, PhD student, École de technologie supérieure
- **9h45-10h05 AM**- Development of a programming tool to automatically identify lung recruitment maneuvers in mechanically ventilated pediatric patients
* Francis-Olivier Beauchamp, MD student, Université de Montréal

- **10h15-10h45 AM**- Coffee break

CDSS FOR DIAGNOSIS AND TREATMENT

- **10h45-11h05 AM**- Transforming monitoring with time-series analysis and AI at the bedside
Andrew Seely, Thoracic surgery and critical care medicine, The Ottawa Hospital
- **11h05-11h25 AM**- Trajectory prediction in pediatric respiratory failure: A conceptual framework
Joseph Kohne, Michigan medicine - Susan B. Meister Child Health Evaluation and Research Center
- **11h25-11h45 AM**- AI and management of acute hyperammonemia
* Mohamed Khalil Ben Salah, PhD student, École de technologie supérieure
- **11h45-12h05 AM**- Assessment of acute respiratory distress using visual temporal information
* Francis-Olivier Beauchamp, MD student, Université de Montréal

- **12h15-13h45 PM**- Lunch break

DIGITAL HEALTH AND MACHINE LEARNING IN HEALTHCARE: A REGULATOR'S PERSPECTIVE

- **13h45-14h05 PM**- New ways of managing intellectual property
Jean Philippe Mikus, Johann Gest, Fasken Martineau DuMoulin S.E.N.C.R.L., s.r.l.
- **14h05-14h25 PM**- Creating a consortium on CDSS in children acute care
Manaf Bouchentouf PhD, Institut TransMedTech de Montréal
- **14h30-14h45 PM**- Coffee break (Public vote, audience award for the best oral presentation)

REIMAGINING THE FUTURE OF THE CONGRESS

- **14h45-15h05 PM**- PALICC and greenhouse gases
Dr Guillaume Émériaud, Pediatric Intensive Care Unit, CHU Sainte-Justine
- **15h05-15h35 PM**- M3C in the metaverse
Mickael Nadeau, XPR LABS
- **15h-45-16h00 PM** - Awards ceremony and closing

