



AI IN MEDICINE SYMPOSIUM:

BEYOND THE ALGORITHM

CUMMING SCHOOL OF MEDICINE

Office of Faculty Development

October 17, 2025

University of Calgary Foothills Campus



**UNIVERSITY OF
CALGARY**

08:15 – 08:45	Registration and Breakfast					
08:45 – 09:40		Keynote: Envisioning the Future of AI Integration in Medicine				
09:40 – 09:50	BREAK					
09:50 – 11:20				I'm New in This Space: Tell Me More About AI	How Are My Colleagues Innovating in AI?	What Do I Need to Know About AI in Education?
11:20 – 11:30	BREAK					
11:30 – 12:30		Panel Discussion: Collaborating with Industry				
12:30 – 13:30	Lunch, Trainee Posters, AI Playground					
13:30 – 14:20		Panel Discussion: What Are the Risks to Using AI in My Clinical Practice		Panel Discussion: AI and Planetary Health		
14:20 – 14:30	BREAK					
14:30 – 16:00			Workshop: Mastering Prompt Engineering		Workshop: AI-Powered Learning Health Systems	Workshop: Critically Appraising AI and Teaching Critical Appraisal Skills
16:00 – 17:00	Closing Remarks, Awards, AI Playground					

08:45 – 9:40 Keynote Presentation

Envisioning the Future of AI Integration in Medicine



Muhammad Mamdani, MPH PharmD

Vice President of Data Science and Advanced Analytics, Unity Health Toronto; Professor, University of Toronto

Dr. Muhammad Mamdani is **one of Canada's leading innovators in healthcare AI**. He serves as Vice President of Data Science and Advanced Analytics at Unity Health Toronto and Director for the Centre for Artificial Intelligence Education and Research in Medicine (T-CAIREM) at the University of Toronto's Temerty Faculty of Medicine. He is also a Professor at the Temerty Faculty of Medicine, the Leslie Dan Faculty of Pharmacy, and the Dalla Lana School of Public Health.

Dr. Mumndani's team integrates **machine learning and advanced analytics into clinical and operational decision-making** to improve outcomes and hospital efficiency. With over **50 active AI deployments** across departments at Unity Health - from emergency to transplant care - their work is setting new standards in healthcare innovation.

He is also affiliated with the Institute for Clinical Evaluative Sciences (ICES) and the Vector Institute - a leading institution for artificial intelligence in Canada and has been named one of Canada's Top 40 Under 40.

09:50 – 11:20 Learning Sessions

I'm New in This Space: Tell Me More About AI

About this session: A session for the beginner in AI! Come and learn the basics of AI, how large language models (like ChatGPT) work, and an introduction to data governance and privacy. No previous AI knowledge required!

Session Moderator: [Jessalyn Holodinsky, PhD](#), Assistant Professor, Emergency Medicine; Director, Artificial Intelligence & Data, Education and Ethics, Office of Faculty Development

09:50 Basics of AI and Machine Learning

[Jessalyn Holodinsky PhD](#), Assistant Professor, Emergency Medicine

10:20 What are Large Language Models?

[Jessalyn Holodinsky PhD](#), Assistant Professor, Emergency Medicine

10:50 Understanding Data Governance and Privacy When Working with AI

[Aliya Kassam, PhD](#), Associate Professor, Community Health Sciences, Research Lead, PGME Program

How Are My Colleagues Innovating in AI?

(Session sponsored by the Department of Biomedical Engineering)

About this session: Come and hear real use cases of AI innovation in research and clinical care from your colleagues in CSM and Beyond!

Session Moderator: [Tyler Williamson, PhD](#), Professor, Community Health Sciences; Director, Centre for Health Informatics.

09:50 TITLE TBD

[James White, MD](#), Professor, Cardiac Sciences; Director, Nelson PULSE Centre

10:10 Sepsis and AI for Recognition

[Na Li, PhD](#), Associate Professor, Community Health Sciences

10:30 Examples of Synthesizing High Value Medical Data

[Ethan MacDonald, PhD, PEng, SMIEEE](#), Associate Professor, Biomedical Engineering

10:50 “Better” AI for Healthcare Applications

[Mariana Pinheiro Bento, PhD PEng](#), Assistant Professor, Biomedical Engineering

11:10 – Q&A

What Do I Need to Know About AI in Education?

About this session: A session for the educator! Come learn about important policies related to AI, thinking about assessment differently in the era of Generative AI, and how we can best prepare our students for the future.

Session Moderator: Jacqueline Hui, MD, MHPE, CCFP (PC), FCFP, DTMH, Director, Teacher Development, Office of Faculty Development

09:50 Overview of Policies on AI and Generative AI

Oleksiy Osiyevskyy, PhD MBA, Associate Dean, Faculty of Graduate Studies

10:10 TITLE TBD

Fabiola Aparicio-Ting, PhD, Associate Dean (Undergraduate Health and Science Education), Cumming School of Medicine

10:30 Rethinking Student Assessment and Personalized Learning Experiences

Soroush Sabbaghan, PhD, Generative AI Educational Leader in Residence, Taylor Institute for Teaching and Learning

10:50 – Moderated Q&A

11:30 – 12:30 Panel Discussion

Collaborating with Industry

Panel Moderator: Naheed Kurji, MBA

About this Panel: This panel explores the vital intersection of industry and healthcare in the AI era. Leading experts will discuss how strategic partnerships drive innovation, sharing real-world examples of successful AI implementations and practical approaches to collaboration. Panelists will address critical questions about finding aligned industry partners and navigating commercialization while maintaining patient-centered care values. Whether you're a clinician, researcher, or a budding entrepreneur, you'll gain valuable insights on building effective collaborations that advance healthcare through AI.

Panelists:

Muhammad Mamdani, MPH PharmD, Vice President of Data Science and Advanced Analytics, Unity Health Toronto Professor, Medicine, University of Toronto

Ines Bartilotti, MD MBA, Senior Director, New Ventures, Innovate Calgary

Tyler Williamson, PhD, Professor, Community Health Sciences; Director, Centre for Health Informatics

Jordan Engbers, PhD, Chief Science Officer, Cohesic Inc.

Oliver Bathe, MD MSc, Chief Executive Officer, Qualisure Diagnostics Inc.

13:30 – 14:20 Panel Discussions

Ask Us Anything: What Are the Risks to Using AI in My Clinical Practice (Session sponsored by Tali Medical Scribe)

About This Panel: This interactive "Ask Me Anything" panel brings together health system leadership, clinical ethicists, and medical-legal specialists to address the complex risks associated with AI implementation in clinical settings. As AI tools increasingly support clinical decision-making, documentation, and care delivery, healthcare professionals face new questions about liability, patient safety, data privacy, and ethical practice. Our panel of experts will field questions directly from participants, providing multidisciplinary perspectives on navigating these emerging challenges. Participants are encouraged to bring their most pressing questions about risk management, ethical boundaries, legal considerations, and implementation safeguards. Join this candid conversation to gain practical insights on maintaining patient-centered care while responsibly integrating AI technologies into clinical care.

Panel Moderator: [Fareen Zaver, MD MSc](#), Associate Dean, Office of Faculty Development

Panelists:

[Jeremy Theal, MD](#), Chief Medical Information Officer, Alberta Health Services

Kyle Anstey, PhD, Clinical Ethicist, Alberta Health Services

Carol Collinge, CIAPP-P, CIPP/C, Privacy Advisor, Alberta Health Services

AI and Planetary Health

About This Panel: This panel discussion examines the complex relationship between artificial intelligence and planetary health. As AI adoption accelerates globally, we must consider both its environmental footprint and potential as a tool for addressing climate challenges. Join this timely discussion at the intersection of technology and sustainability as we consider how AI can be harnessed as a force for planetary health rather than environmental harm.

Panel Moderator: [Stephen Wilton, MD MSc](#)

Panelists:

[Clark Svrcek, MD PEng](#), Assistant Professor, Family Medicine

[Kannin Osei-Tutu, MD, MSc](#), Associate Dean, Health Equity and Systems Transformation

Helga Vanthournout, MBA, MSc, Sessional Instructor, School of Public Policy; Former Senior Sustainability Expert, McKinsey & Co.

14:30 – 16:00 Concurrent Workshops

Mastering Prompt Engineering: How Do You Get AI to Do What You Want It to Do?

About This Workshop: This interactive workshop provides practical skills in understanding the behaviour of Large Language Models and prompt engineering—the art of effectively communicating with AI systems to achieve desired outcomes. Participants will move beyond basic AI interactions to develop a more sophisticated understanding of how LLMs think, how we can give them additional knowledge and tools, and how we can employ prompting techniques that enhance clinical workflows and research applications.

Through guided exercises, you'll learn to generate more accurate, useful, and reliable AI outputs. The workshop covers key concepts including:

- Model behaviour and 'Machine Psychology'
- Prompt structure and syntax for different AI tasks
- Providing additional knowledge and tools to LLMs
- Retrieval-Augmented Generation (RAG) and Fine Tuning

Participants will apply these skills to tailored scenarios, working with real-world examples such as clinical documentation, research synthesis, and patient education materials. By the end of the session, you'll have developed a toolkit of prompt engineering approaches that can be immediately applied in your professional context. Bring your laptop for this hands-on learning experience. No prior AI expertise required—just curiosity and willingness to experiment!

Workshop Leader: Mohammad Keyhani, PhD, Associate Professor, Haskayne School of Business

AI-Powered Learning Health Systems: From Concept to Implementation

About This Workshop: This workshop will give a foundational overview of learning health system principles—where knowledge generation, evidence-based practice, and quality improvement form a continuous cycle. Participants will then explore how AI and advanced analytics serve as catalysts in this cycle, enabling pattern recognition and predictive capabilities beyond traditional methods. Real-world learning health system projects will be showcased. These case studies will illustrate both technical approaches and change management strategies essential for success.

The second segment features a practical consultation component facilitated by the ConnectCare Research IT team who will walk participants what features are available to researchers in ConnectCare and how to submit requests for research builds and reporting. Attendees can ask questions about how to identify necessary data elements, design effective queries, and create sustainable reporting structures that support their specific improvement initiatives.

Participants will leave with a roadmap for designing an AI-enabled learning health system projects within their own area of practice, practical data access strategies, and connections to a community of practice engaged in similar work. This workshop bridges theory and application, making it valuable for clinicians, quality improvement specialists, and researchers alike.

Workshop Leaders: [Kirsten Fiest, PhD](#), Associate Professor, Critical Care Medicine; Scientific Director, O'Brien Institute for Public Health and [Inelda Gjata, BSc](#), Research Manager (Learning Health Systems), O'Brien Institute for Public Health

Critically Appraising AI and Teaching Critical Appraisal Skills

About This Workshop: This workshop develops essential competencies for evaluating AI technologies in healthcare through evidence-based critical appraisal—a crucial skill set for both clinical practice and medical education. Participants will master a structured framework examining key AI dimensions through interactive exercises. Attendees will strengthen their ability to identify methodological issues and formulate essential pre-implementation questions. For educators, the workshop addresses the urgent need to incorporate AI literacy into curricula. Participants will explore effective pedagogical approaches for teaching critical appraisal of AI, including case-based learning scenarios, assessment rubrics, and progressive competency development across training levels. Educational materials provided can be readily adapted for various health professions programs, from undergraduate medical education to continuing professional development.

The session balances theoretical understanding with practical application, ensuring participants can both personally evaluate AI tools and effectively teach these skills to students and colleagues. Discussion will include strategies for addressing the "black box" nature of some AI systems when teaching critical thinking, and methods for keeping educational content current in this rapidly evolving field. Join us to enhance both your personal critical appraisal skills and your ability to develop these competencies in the next generation of healthcare professionals navigating an increasingly AI-integrated landscape.

Workshop Moderator: [Jacqueline Hui, MD, MHPE, CCFP \(PC\), FCFP, DTMH](#), Director, Teacher Development, Office of Faculty Development

Workshop Leaders: [Aliya Kassam, PhD](#), Associate Professor, Community Health Sciences, Research Lead, PGME Program and [Brenda McDermott, PhD](#), Director (Student Experience and Support), Student Accessibility Services

Welcome to the AI Playground!

(Brought to you by the Centre for Health Informatics)

Step into the future of medical practice, research, and education at our interactive AI Playground. This isn't a typical vendor exhibition - it's a collaborative learning environment where you can explore cutting-edge tools with guidance from colleagues who are already using them successfully.

Experience AI tools for:

- Literature research and evidence synthesis
- Clinical documentation and workflow optimization
- Educational content creation and assessment
- Research data analysis and manuscript writing
- Grant writing and research proposal development

Your colleagues and trainees will demonstrate free tools you can start using immediately, while healthcare AI companies will showcase solutions designed specifically for medical professionals. Browse student research posters showcasing AI applications in medical education and research and contribute your thoughts at our interactive reflection stations.

Whether you're an AI novice or looking to expand your toolkit, the Playground offers something for everyone. Come curious, leave equipped.

Table #	Tool Name	Presented By:
1	Tali Medical Scribe	Tali
2	ChatGPT	Sarah Whittle, Centre for Health Informatics
2	CoPilot	Chelsea Wellman & Sergiu Cociuba, Centre for Health Informatics
3	Scite	Megan Harmon, Centre for Health Informatics
3	Napkin.ai	Jaden Frizzell, Centre for Health Informatics
4	Gemini	Riley Martens, Centre for Health Informatics
4	Claude	Rhys Clark, Centre for Health Informatics
5	Grammarly	Samuel Wang, Centre for Health Informatics
5	ZoomAI	Ingrid McKibbin, Centre for Health Informatics
6	NotebookLM	Alexander Burn, Centre for Health Informatics
7	Elicit	Vaughan Love, Centre for Health Informatics

Trainee Posters

1	<u>Nina Carcamo Arakawa</u> , Gabriel Aidan Berbasal Pagador, Therese Poulin, Gurasis Singh, Kirsten M. Fiest	Translation and Cultural Adaptation of the Family ICU Delirium Detection Instrument and Comparison to AI Translation
2	<u>Austin A. Barr</u> , Brij S. Karmur, Anthony J. Winder, Eddie Guo, John Lysack, James N. Scott, William F. Morrish, Muneer Eesa, Morgan Wilson, David W. Cadotte, Michael M.H. Yang, Ian Y.M. Chan, Sanju Lama, Garnette R. Sutherland	Generation and Expert Validation of Synthetic Neuroimaging Data
3	<u>Beverly Dong</u> , Emma Bogner, Bryan Har, Bing Li, Danielle A. Southern, Christopher L. F. Sun, Robert C. Welsh, Benjamin Tyrrell, Colm J. Murphy, Arjun Puri, Joon Lee	Short-term and long-term outcome prediction for patients with coronary artery disease using machine learning and comprehensive multi-center patient data
4	<u>Beverly Dong</u> , Tom Mullie, Arjun Puri, Emma Bogner, Bryan Har, Colm J. Murphy, Robert C. Welsh, Benjamin Tyrrell, Christopher L. F. Sun, Joon Lee	Health economic simulation modeling of an AI-enabled clinical decision support system for coronary revascularization
5	<u>Gordon Jewett</u> , Colin B Josephson, Reed Ferber, Lawrence Korngut, Dr. Joon Lee	Supervised machine learning can predict gross motor function class using free-living consumer smartwatch data
6	<u>Artemy Gavrilov</u> , Hyojeong Kim, Pedro de Paiva, Mariana Bento	Investigating Demographic Bias in Healthcare within Predictive Machine Learning Models
7	<u>Farzaneh Dehghani</u> , Sayeh Bayat, Mariana Bento	Trustworthy Machine Learning to Support Alzheimer's Disease Detection
8	<u>Matt Warkentin</u> , Monica Mullin, Darren Brenner, Alain Tremblay	Evaluating Large Language Models for Summarizing Radiology Reports into Personalized Patient Letters in a Lung Cancer Screening Program
9	<u>Matt Warkentin</u> , Hector Jose Peroni, Alain Tremblay	NEBULA: Neural Network for Endobronchial Ultrasound Lung Lesion Assessment
10	<u>Abhishek Rajora</u> , Ankur Garg, Eugene Vorontsov, Ana Nikolic, Samira Ebrahimi Kahou	Improving Pathology Foundation Models for Brain Tissue Using Parameter Efficient Finetuning
11	<u>Pedro Paiva</u> , Marina Gavrilova and Mariana Bento	A Systematic Evaluation of Bias Mitigation in Healthcare AI
12	<u>Yves Nsoga</u> , Eulee Kwon, Joon Lee	CDmetrics: an open-source Python library for case difficulty research in health

13	<u>Jiajun Wu</u> , <u>Swaleh Zaidi</u> , Braden Teitge, Henry Leung, Jiayu Zhou, Jessalyn Holodinsky, Steve Drew	Dual-stage and Lightweight Patient Chart Summarization for Emergency Physicians
14	<u>Jiajun Wu</u> , <u>Hutton Ledingham</u> , Braden Teitge, Jiayu Zhou, Jessalyn Holodinsky, Steve Drew	LLM-Driven Agent-Based Simulator for Emergency Department Operations
15	<u>Corin Kuang</u> , Camilo E. Valderrama, Henry T. Stelfox, Colin B. Josephson, Joon Lee	Clinicians vs. AI in Patient Outcome Prediction in the Intensive Care Unit
16	<u>Sobia Akram Khawaja</u>	Helping Leaders See the Future: Using AI Simulations to Support Health Professions Education Policy Decisions
17	<u>Brij S. Karmur</u> , Austin A. Barr, Alex A. Leung, Garnette R. Sutherland, Jay Riva-Cambrin	Using Machine Learning Models to Predict High-Grade Meningioma with Preoperative MR Imaging: A Meta-Analysis of Diagnostic Test Accuracy
18	Gavin Thomas, Kurt Wilde, Isabella Salazar, Marcus Doyle, Sujeev Chohan, Abdul Al-Shawaa	Large Language Model Performance on Orthopedic Surgery Written Examinations: A Rapid Systematic Review

Sponsors

We gratefully acknowledge the generous support of our sponsors, whose contributions have made the **AI in Medicine Symposium** possible. Their commitment to advancing innovation, collaboration, and discovery in medical education and research has been instrumental in bringing this event to life.

Thank you for helping us create a space where ideas can flourish and new connections can be made.

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Acknowledgements



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