2023-2024

Harnessing AI and Technology to Advance Cancer Care and Research

Cancer Digital Intelligence Impact Report

cancer digital intelligence

UHN Princess Margaret Cancer Centre

The Princess Margaret Cancer Foundation UHN

Leadership Message

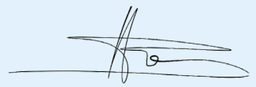
We are proud to celebrate Cancer Digital Intelligence's (CDI) second year of operation, which saw remarkable advancements in the application of data science, technology, and responsible AI to transform cancer care and research at the Princess Margaret Cancer Centre. These achievements have been possible through the dedication of each member of the CDI team, whose commitment to exceptional patient care is the foundation of our success. We extend a heartfelt thank you to the entire team for their impressive work and impact. Additionally, we would like to express our sincere gratitude to CDI's leadership team and The Princess Margaret Cancer Foundation for their unwavering support and partnership in driving these innovations forward.

Throughout this report, you will read about CDI's innovations in care. We have improved the way patients connect with their care teams by launching Digital Triage in 16 outpatient clinics, a digital tool that allows patients to submit questions and concerns and receive a prompt response. We have also expanded our work to efficiently match patients to clinical trials through further development to streamline the clinical trial matching process.

Using artificial intelligence (AI), CDI is collaborating with teams to train models that will make radiation treatment planning less time-intensive, giving physicians more time for patient care. Additionally, we are bridging the gap between computational and bench scientists by creating a web portal that facilitates the sharing of software tools needed to analyze data and make bold cancer discoveries.

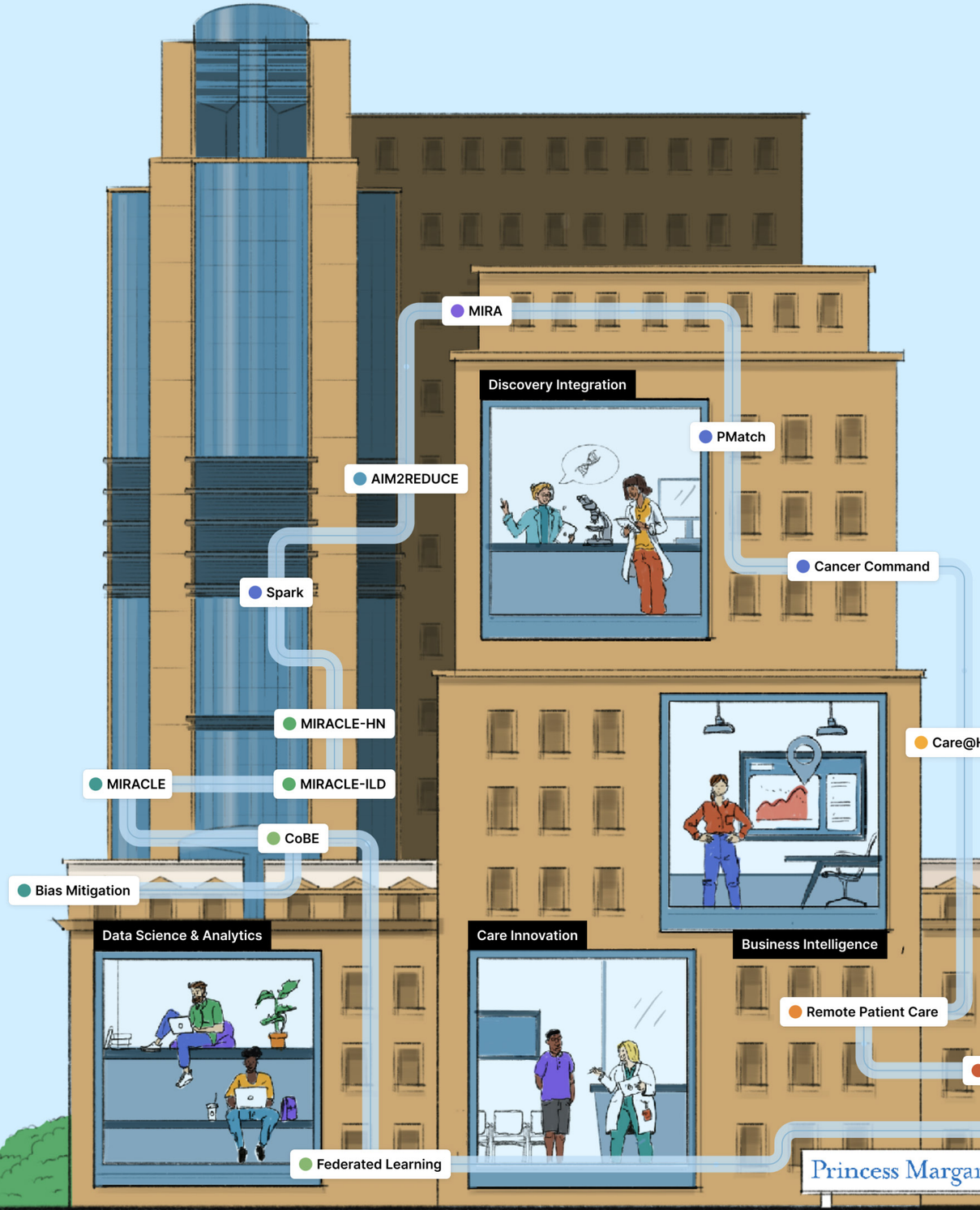
We built digital dashboards to share data across the cancer centre that will support informed decision-making, enhance transparency, foster collaboration, and increase clinic efficiency. We are also committed to fueling scientific discovery by providing resources, expertise, and mentorship to future cancer research leaders.

As we look ahead, our focus will remain on finding transformative ways to reimagine cancer care for our patients, caregivers, researchers, and providers.



Dr. Benjamin Haibe-Kains
Scientific Director, CDI

Dr. Alejandro Berlin
Medical Director, CDI



Shaping the Future of Cancer Care

Cancer Digital Intelligence (CDI) is a research and innovation program at the Princess Margaret Cancer Centre. We transform cancer care, accelerate discoveries, and optimize operations using responsible AI and meaningful technology. To accomplish this, we use data science and analytics in three key areas:

Care Innovation: Improving patient care through digital innovation and service design.

Discovery Integration: Translating research by using AI and technology to accelerate discoveries.

Business Intelligence: Building real-time, predictive analysis to inform decision-making.

Our work has optimized clinic workflows, improved patient access to care teams, ensured data is accessible across the cancer program, and automated processes to allow physicians more time for patient care. In addition, we have provided foundational support and digital expertise to researchers and projects, helping to advance and scale their work across the University Health Network and beyond. Thanks to this support, Princess Margaret researchers have secured over $2.3 million to continue the work that started in collaboration with CDI.

We will continue to fuel the next breakthroughs in cancer care and research. Over the coming year, we will explore the use of federated learning that will enable Princess Margaret to leverage national and international data to train AI models while ensuring patient privacy. We will implement new ways to deliver care at home, expand our remote patient monitoring programs, and create a physical command centre to share real-time data across the cancer program. By harnessing the power of data to drive innovation, we will continue to accelerate new discoveries in cancer research and enhance patient care.

Thanks to CDI's support and expertise, Princess Margaret researchers have secured over **$2.3 million** to continue their work.

Digital Triage

New Tool Seamlessly Connects Outpatients With Their Care Teams

9.3K

Digital Triage requests were submitted by patients in the first eight months

16

outpatient clinics using Digital Triage

Any outpatients needing to connect with their care teams while outside the cancer centre now have a convenient and easy-to-use digital solution. Digital Triage, an innovative solution co-designed by CDI and our partners, allows all outpatients to contact their care teams using a digital form within the myUHN Patient Portal.

The algorithm-driven form is available across all 16 outpatient clinics and uses specific prompts to collect essential information from patients, seamlessly directing questions or concerns to the appropriate care team members. This system not only provides improved access to a patient's care team, but it also creates a catalogue of patient needs that help identify trends and spark new opportunities for innovation and research.

Digital Triage is a significant step forward in modernizing and optimizing Princess Margaret's triage service. It builds upon CDI's pilot, pmhelp.ca, that was first launched in the lung and sarcoma clinics in September 2022. Using the learnings from the pilot, CDI integrated and applied the solutions to build and test over 1,200 distinct workflows within Epic, UHN's electronic health information system.

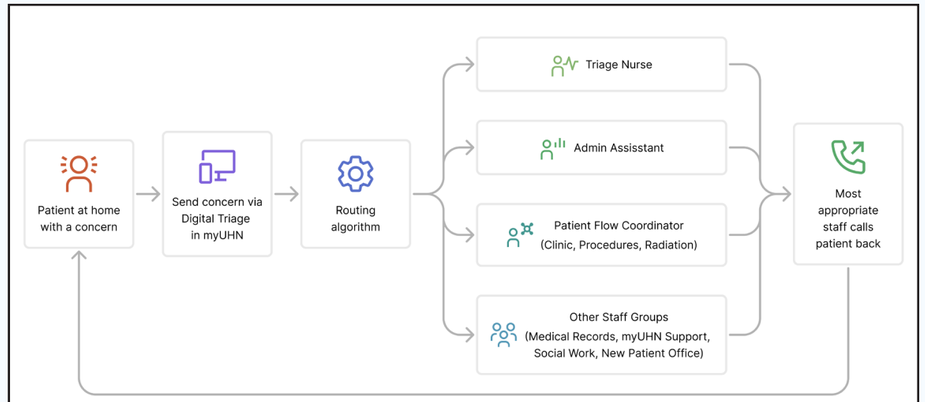
By methodically testing nine different request types across 16 cancer clinics and nine different clinical roles, CDI ensured patient requests were accurately routed to the right person at the right time to receive the best care possible.

"I appreciate the prompt reply from my care team and oncologist when using Digital Triage."

Digital Triage User

1.2K

distinct routing flows automatically executed by the Digital Triage service

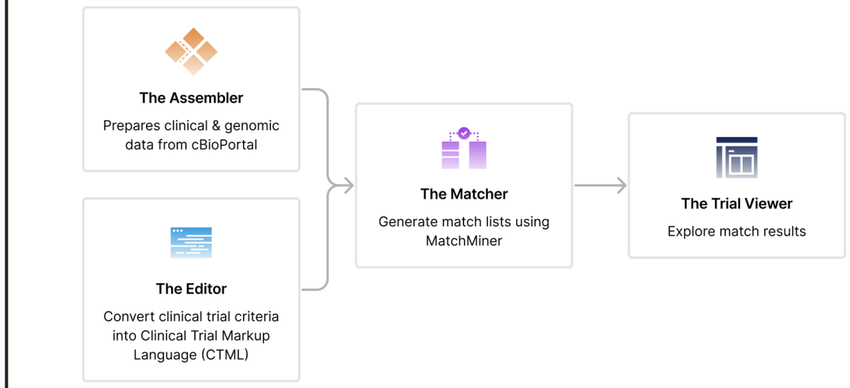


An illustration of the Digital Triage workflow, starting with a patient sending a Digital Triage request and ending with the request being routed to the appropriate care team member.

With high patient and provider satisfaction, CDI will continue to expand the service by developing new features in collaboration with UHN Digital. By innovating within Epic, CDI is creating a roadmap to build capacity for future improvements that will streamline provider workflows and elevate the patient experience.

This initiative is a collaborative effort led by CDI and leadership teams across the cancer centre, including UHN Digital, myUHN support, Cancer Care Quality & Innovation, triage nurses, patient flow coordinators, and clinic managers and directors.

Transforming How Patients Are Matched to Clinical Trials



The Clinical Trial Integrated Matching System (CTIMS) offers a new trial matching process that significantly minimizes the time and resources required to identify patients eligible for clinical trials. This workflow is now a subcomponent of the PMATCH program.

Matching patients to clinical trials is a highly manual and time-consuming process. The Clinical Trial Integrated Matching System (CTIMS), a Princess Margaret Grand Challenge winner, is tackling this problem by using an unprecedented level of automation and scalability.

Spearheaded by cancer genomics researcher Dr. Trevor Pugh, CDI Scientific Director Dr. Benjamin Haibe-Kains, and the CDI team, CTIMS introduces an innovative approach by using a patient's "digital fingerprint" comprised of genomic, pathology, and clinical data to pinpoint trials they may be eligible for using automation.

CTIMS's advancements in match efficiency and accuracy have led to additional support from Genome Canada to expand across the Canadian Cancer Clinical Trials Network. This work has also led to exciting collaborations with Dana-Farber Cancer Institute and Memorial Sloan Kettering Cancer Center. Further development, validation, and quality control will continue through the Princess Margaret Patient Matching (PMATCH) initiative, which will scale up the system for research and clinical use. Led by Drs. Pugh and Haibe-Kains, PMATCH will interlink data from multiple sites and technologies to streamline clinical trial matching.

Team Member Spotlight

Melissa Kozak

Meet Melissa Kozak, Clinical Engineer at CDI

What does a typical day look like for you?

Recently I've been doing a lot of building in Epic, our electronic health record system, to create new remote patient monitoring programs for the Gynecological Oncology department. This includes the Gyne ChemoRads Remote Patient Monitoring (RPM) program, the MBOT (My Bowels On Track) program, and asynchronous care for stable patients on PARP inhibitor (PARPi) therapy. To support this work, sometimes I'm in the clinic shadowing staff to better understand their workflows, or meeting with patients to get their valuable feedback on a program. I use the research and data I collect to help build safe and effective RPM programs.

In the AI space, I'm also helping UHN become part of a Federated Learning network to ensure AI models that we develop can benefit from learning from a larger, more diverse dataset than would be possible within the walls of UHN alone. For me, this involves collaborating with UHN Privacy and Security, Legal, and our clinical stakeholders to ensure we have the necessary protocols, agreements, infrastructure, ethics, and approvals in place to support this work.

What accomplishment are you most proud of?

I'm most proud of the Gyne ChemoRads RPM program because it was my first time building a new clinical program in Epic, UHN's electronic health information system. I had to become certified to build in Epic, which involved taking courses, completing a project, and writing an exam. Once I was certified to build, there was no real playbook to create an RPM program.

I had to figure out creative ways to meet the program's requirements by building in the Epic environment and then pushing the new changes into production where patients could report their symptoms safely from their home, and staff could monitor patients and proactively follow up if needed.

What motivates you in your role?

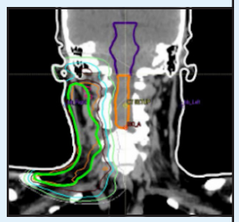
For me, it's all about the potential to improve care for patients. That includes making care safer and less burdensome, especially at a time when someone is possibly feeling their worst. Patients need to deal with symptoms even after they've left the cancer centre. Providing an option for patients to be at home and feel supported in managing their symptoms is a patient-centric way to provide supportive care.

Can you share a fun fact about yourself?

I really enjoy knitting and have recently started designing and selling knitting patterns and kits.

Investing in Digital Intelligence

Princess Margaret Cancer Centre Grand Challenges support bold, innovative, and high-impact projects across the spectrum of cancer care. As part of the Grand Challenges, CDI launched an open call for projects with a focus on applying digital intelligence to improve cancer care or research. Projects had to clearly demonstrate scalability and have a plan for implementation across cancer patient populations, clinical or research activities at Princess Margaret. In the 2023-2024 application round, two projects were selected for their innovative approach and bold implementation plan that could scale, grow, and be sustainable beyond the 12-month Grand Challenge.



A radiation treatment plan identifying the areas to target for radiation therapy.

MIRACLE-HN: A MIRA Clinical Learning Environment for Head and Neck Radiation Therapy Decision Support

Radiation therapy remains a critical component of cancer treatment in head and neck malignancies. However, developing radiation treatment plans to accurately identify healthy and tumour tissues is a time-intensive, manual task.

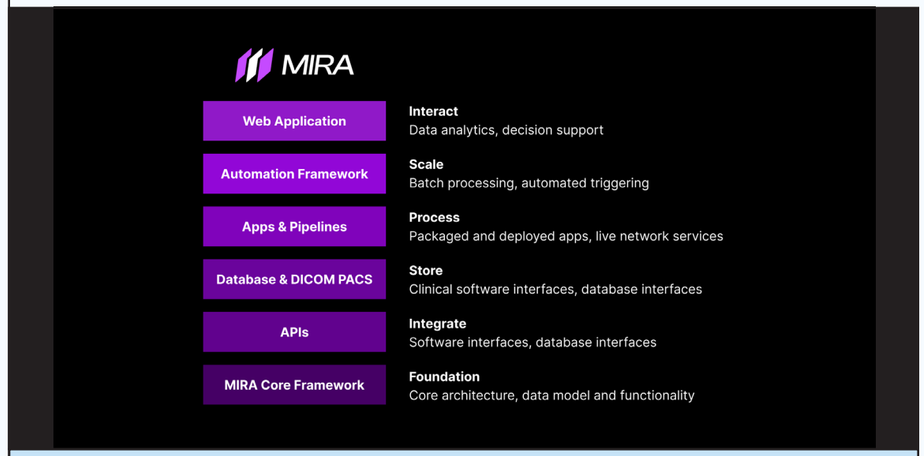
MIRACLE-HN tackles this challenge head-on by providing new tools to safely automate radiation treatment to assist physicians in making high-quality treatment decisions. These segmentation tools and decision supports will enable rapid adjustments to a patient's radiation plans based on tumor response or other factors. Once these automated tools have been validated, they will be adapted and applied to other cancer sites across Princess Margaret's Radiation Medicine Program.

CoBE: Computational & Bench Scientist Ecosystem

Cancer research relies on the generation and analysis of big data to drive bold advancements in cancer discovery. Tools developed by computational scientists are essential for analyzing the large biological data generated by bench scientists. Collaboration plays a crucial role in ensuring that scientists have access to the right tools for effective data analysis, and CoBE is leading this effort.

CoBE is an innovative web portal and recommendation engine that connects computational and bench scientists. It enables scientists to quickly find or contribute self-contained, fully reproducible software tools designed to address the most pressing analytical needs. With a growing library of over 9,000 tools, CoBE empowers scientists to confidently analyze complex datasets. The next phase of CoBE focuses on expanding its user base to increase the reach and impact of these tools.

Driving the Future of AI in Cancer Care with MIRA



MIRA is a software platform for developing and deploying image pipelines, prediction models, and machine learning algorithms within the UHN environment. MIRA is composed of several layers built upon one another to provide increasingly powerful and streamlined functionality.

Healthcare is undergoing a significant transformation as it increasingly embraces AI, revolutionizing precision medicine, predictive analytics, real-time monitoring, and decision support. However, one of the major challenges in fully operationalizing AI in clinical settings is the need for flexible and reliable software tools. These tools are crucial for extracting clinical data from diverse and evolving sources, processing it efficiently, and integrating validated data-driven workflows back into clinical practice.

At the forefront of this transformation is CDI in collaboration with the Radiation Medicine Program at Princess Margaret. Together, they have developed MIRA, a cutting-edge software application designed to bridge the gap between clinical data and its application in cancer care. MIRA facilitates data analysis and the deployment of automated, data-driven pipelines and AI models within the UHN clinical environment.

The MIRA platform is currently being used to automatically identify patients at Princess Margaret with Interstitial Lung Disease (MIRACLE-ILD), an underlying and often undiagnosed condition that can affect radiation treatment plans. It is also being used to develop radiation treatment plans that accurately identify healthy and tumour tissue for targeted radiation therapy (MIRACLE-HN). In both projects, MIRA utilizes deep learning algorithms trained on thousands of treatment scans and tested for accuracy.

MIRA has demonstrated the tremendous opportunities that exist for incorporating AI into clinical workflows. It provides a scalable solution that enables clinicians and researchers to develop custom pipelines for both retrospective analysis and clinical integration, ensuring that patients at Princess Margaret receive the best care.

Cancer Command

Building a Digital and Data-Enabled Cancer Centre

7M+

data points analyzed and visualized on digital dashboards

11

dashboards displaying clinic volumes, wait times, patient experiences, safety, and more

Data sharing across the cancer program is essential to support informed decision-making, enhance transparency, foster collaboration, and increase efficiency with the goal of delivering better cancer care.

CDI, in collaboration with the Cancer Care Quality & Innovation team, developed Cancer Command, a centralized system that visualizes quality, safety, and operational metrics across the cancer centre. Cancer Command provides comprehensive, user-friendly dashboards to support initiatives around patient experience, smart capacity, quality transformation, and integrative predictive AI models. These dashboards are accessible to providers through a centralized website as well as on large monitors, promoting data-driven innovations across the cancer centre.

The next phase of this work includes creating a physical command centre with dedicated resources that will monitor real-time data to support patient flow into acute oncology and inpatient wards, including monitoring patients remotely.

Cancer Command monitor displaying quality, safety, and operational metrics at Princess Margaret Cancer Centre.

Team Member Spotlight

Meet Adam Badzynski, Designer at CDI

Adam Badzynski

How do you apply your design expertise in your role?

As a designer in healthcare, I collaborate with everyone from patients to leadership. My role hones my visual design skills and applies design thinking to projects impacting patients, providers, and researchers.

What projects have you worked on this past year?

Recently, I've been working on Cancer Command, a hub for clinicians, researchers, and leadership at Princess Margaret to access clinical data. I design and develop data visualizations to convey data accurately and meaningfully. I work with clinical partners to understand their needs and design the most effective charts.

I also support our development team with my UI/UX expertise, contributing to apps such as MIRA, Research Data Storage, and CoBE, all used by staff at Princess Margaret. I maintain a user-centric focus, considering all user interactions and providing design recommendations.

What project are you most proud of?

I'm most proud of my involvement with the Digital Triage service, launched in Fall 2023. This service allows patients to contact their clinic with questions or concerns via their MyUHN app on their smartphone or desktop. Over the past few years, I've worked closely with the team on this project. I've conducted patient interviews, designed prototypes in Figma, developed an MVP using low-code tools, evaluated the success of our pilot, and finally transitioned the entire service into Epic. It's been a multi-year project that I still love working on because it directly impacts the patient experience for those living with cancer.

What inspires you in your role?

Every time I meet with patients for an interview, I'm reminded why I love my job: to enhance their experience as they navigate one of life's toughest challenges. Cancer is complicated and frightening, and if I can use my expertise in design thinking to improve patient or clinician experiences, then I've done my job.

How do you think your role will change in the future?

As we get more and more attuned with AI, I see designers using AI to complement their workflow by generating designs and organizing information.

Can you share a fun fact about yourself?

I love creating ceramics on the potter's wheel. I'm grateful I can engage both my hands and mind in something outside of cancer care.

Augmented Human Intelligence in Cancer Symposium

At CDI, we understand the importance of collaboration and sharing expertise to drive the next breakthroughs in cancer care and research. At the Princess Margaret Cancer Centre, we work with care teams, patients, researchers, and external partners to apply the latest digital technologies to improve patient outcomes and experiences. To strengthen and expand collaborations within the cancer centre and with other institutions, CDI hosted its first symposium on December 15th, 2023.

From left to right, panelists Lesley Rapaport, Melissa McCradden, Tomi Poutanen, and Muhammad Mamdani at CDI's Augmented Human Intelligence in Cancer Symposium on December 15, 2023.

The Augmented Human Intelligence in Cancer Symposium united clinicians, researchers, and data scientists, creating a platform for sharing the latest research, advancements, and best practices that are transforming cancer care delivery and diagnosis.

The symposium began with keynote speaker Dr. Andre Dekker from The Netherlands who discussed federated learning, a decentralized way to train AI models on data from different countries while ensuring all data remains localized. His talk emphasized the importance of privacy and data security and illustrated how you can train robust models and create scalable AI applications without compromising sensitive patient and healthcare data.

Following the keynote address, Dr. Monika Krzyzanowska moderated an engaging panel discussion highlighting the innovative work at the Princess Margaret Cancer Centre (PM). Dr. Robert Grant, medical oncologist at PM, discussed his work with CDI applying machine learning to develop and evaluate early warning scores for undesirable cancer events during treatment in a project known as AIM2REDUCE.

Dr. Andrew Hope, radiation oncologist at PM, presented his work with CDI on MIRACLE-ILD, an AI model that can identify patients with an underlying and often undiagnosed condition known as Interstitial Lung Disease that can affect patient outcomes.

Dr. Dan Moldoveanu, UHN Endocrine Surgery Fellow, discussed his use of AI in surgery where models are trained to provide real-time surgical guidance with images that identify safe and danger zones for operation. UHN Chief AI Scientist Dr. Bo Wang concluded the discussion with his work on generative AI models that can learn the pattern and structure of the input training data to generate new data that have similar characteristics.

The afternoon panel discussion brought experts from industry and collaborating institutions to discuss their application of AI in cancer care as well as the challenges in their work. Dr. Muhammad Mamdani from T-CAIREM, Dr. Melissa McCradden from the Hospital of Sick Children, and Signal 1 CEO Tomi Poutanen led thoughtful discussions that explored AI best practices. In a dual role, UHN Legal and Intellectual Property Counsel Lesley Rapaport discussed the legal implications of using AI in healthcare while skillfully moderating audience participation.

To close out the symposium, Drs. Alejandro Berlin and Gary Rodin debated the provocative resolution that AI will lead to more humane cancer care. Dr. Berlin debated the pro stance while Dr. Rodin challenged the premise of the resolution. Both debaters brought up compelling arguments, but ultimately the audience agreed with Dr. Rodin's arguments. ChatGPT played an active role throughout the debate, helping evaluate and summarize arguments as well as bringing each argument to life using AI-generated illustrations to represent each side.

To learn more about the speakers and watch all the presentations, visit Cancer Digital Intelligence's website.

"We need augmented intelligence for higher efficiency and higher efficacy in health care."

Dr. Andre Dekker

Medical Physicist and Professor of Clinical Data Science
Maastricht University Medical Center and Maastro Clinic

"AI will improve cancer care if done with the right core values."

Dr. Benjamin Haibe-Kains

CDI Scientific Director

Fueling the Next Generation of Canada's Research Leaders

CDI is committed to supporting the next generation of cancer research leaders. Now in its third year, the CDI Spark Award continues to support basic science research trainees across UHN leverage the power of data science and machine learning to uncover unseen trends in their data and make bold cancer discoveries.

This year, four exceptional research trainees join the Spark Award program to receive resources and invaluable mentorship needed to conduct innovative research.

Mary Agopian

Making T cell genomics quantitative and robust using synthetic spike-in standards

"The Spark Award has exceeded my expectations and has helped guide my project. The group workshops have enriched my knowledge in computational biology and data science. My work has grown and improved thanks to the collaborative learning environment provided by CDI."

Principal Investigator: Dr. Michael Hoffman

Shawn Hercules

Rooting for Prevention: Identification and Spatial Interrogation of High-Risk Breast Tissues for Risk Stratification and Precision Prevention

"CDI's one-on-one meetings have been invaluable, providing dedicated time with experts to gain perspective, apply learnings, and make progress in my project."

Principal Investigator: Dr. Rama Khokha

Rajesh Detroja

Genome-wide DNA methylation to identify novel epigenetic subtypes of follicular lymphoma and their biological interpretation.

"The CDI Spark Award has provided a critical opportunity to advance my research project on uncovering novel subtypes in follicular lymphoma. Participating in group training sessions with CDI specialists and attending educational webinars has been immensely beneficial. These opportunities have helped me gain significant insights in machine-learning techniques."

Principal Investigator: Dr. Robert Kridel

Vivian Chu

Efficient therapeutic siRNA design for cancer treatment using explainable deep learning

"The educational webinars have been insightful, providing a solid foundation in data science and machine learning concepts that I have applied to my research project."

Principal Investigators: Drs. Bo Wang and Hansen He

Publications & Conferences

Chakraborty, J., Midya, A., Kurland, B. F., Welch, M. L., Gonen, M., Moskowitz, C. S., & Simpson, A. L. (2024). Use of Response Permutation to Measure an Imaging Dataset's Susceptibility to Overfitting by Selected Standard Analysis Pipelines. Academic Radiology. Advance online publication. https://doi.org/10.1016/j.acra.2024.02.028

Gouthamchand, V., Choudhury, A., Hoebers, F. J. P., Wesseling, F. W. R., Welch, M., Kim, S., Kazmierska, J., Dekker, A., Haibe-Kains, B., van Soest, J., & Wee, L. (2024). Making head and neck cancer clinical data Findable-Accessible-Interoperable-Reusable to support multi-institutional collaboration and federated learning. BJR Artificial Intelligence, 1(1), ubae005. https://doi.org/10.1093/bjrai/ubae005

Grant, B., Kabir, M. M., Patel, T., Narine, S., Tadic, T., Liu, G., Grant, R. C., & Truong, T. (2023, October 12-13). Designing a scalable pipeline for ML Ops to expedite AI research and deployment at Princess Margaret Cancer Centre. [Conference Presentation]. T-CAIREM AI in Medicine Conference, Toronto, ON, Canada. https://tcairem-conference.ca/wp-content/uploads/2023/10/TCAIREM_Abstract-Booklet.pdf

Grant, R. C., He, J. C., Khan, F., Liu, N., Podolsky, S., Khaliwal, Y., Powis, M., Notta, F., Chan, K. K. W., Ghassemi, M., Gallinger, S., & Krzyzanowska, M. K. (2023). Machine learning-based early warning systems for acute care utilization during systemic therapy for cancer. Journal of the National Comprehensive Cancer Network, 21(10), 1029-1037.e21. https://doi.org/10.6004/jnccn.2023.7046

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He, J. E., Moffat, G. T., Podolsky, S., Khan, F., Liu, N., Taback, N., Gallinger, S., Hannon, B., Krzyzanowska, M. K., Ghassemi, M., Chan, K. K. W., & Grant, R. C. (2024). Machine learning to allocate palliative care consultations during cancer treatment. Journal of Clinical Oncology, 42(14), 1625-1634. https://doi.org/10.1200/JCO.23.0129

Hope, A. (2023, May 14). Interdisciplinary Best Paper: Prospective assessment of AI screening for interstitial lung disease (ILD) in radiotherapy [Conference Presentation]. Estro 2023 Conference, Vienna, Austria.

Kazmierski, M., Welch, M., Kim, S., McIntosh, C., Rey-McIntyre, K., Huang, S. H., Patel, T., Tadic, T., Milosevic, M., Liu, F.-F., Ryczkowski, A., Kazmierska, J., Ye, Z., Plana, D., Aerts, H. J. W. L., Kann, B. H., Bratman, S. V., Hope, A. J., & Haibe-Kains, B. (2023). Multi-institutional prognostic modeling in head and neck cancer: Evaluating impact and generalizability of deep learning and radiomics. Cancer Research Communications, 3(6), 1140–1151. https://doi.org/10.1158/2767-9764.CRC-22-0152

Kim, S. (2024, March 23) Best Paper Award: Predicting patient-level extranodal extension using pre-treatment computed tomography imaging [Conference Presentation]. ICHNO 2024 Conference, Barcelona, Spain.

Kim, S., Kazmierski, M., Qu, K., Peoples, J., Nakano, M., Ramanathan, V., Marsilla, J., Welch, M., Simpson, A., & Haibe-Kains, B. (2024). Med-ImageTools: An open-source Python package for robust data processing pipelines and curating medical imaging data (Version 2; peer review: 2 approved with reservations). F1000Research, 12, 118. https://doi.org/10.12688/f1000research.127142.2

Kozak, M. (2023, May 29). Incorporating AI results in clinical workflows: A human factors perspective [Conference Presentation]. eHealth 2023 Conference, Toronto, Canada.

Lovas, M., Krzyzanowska, M. K., Somji, F., Devonish, S., Spiro, G., Truong, T., Lane, K., Badzynski, A., Wolf, S., Tymoshyk, I., Macedo, A., Dozois, G., Bravo, A., Julius, A., Moody, L., Kooner, S., Melwani, S., & Berlin, A. (2023). Addressing challenges in telephone triage for outpatient oncology care: A data-centred digital routing solution. JCO Oncology Practice, 19(11_suppl), 591-591. https://doi.org/10.1200/OP.2023.19.11_suppl.591

Welch, M. L., Kim, S., Hope, A. J., Huang, S. H., Lu, Z., Marsilla, J., Kazmierski, M., Rey-McIntyre, K., Patel, T., O'Sullivan, B., Waldron, J., Bratman, S., Haibe-Kains, B., & Tadic, T.; Princess Margaret Head and Neck Site Group. (2024). RADCURE: An open-source head and neck cancer CT dataset for clinical radiation therapy insights. Medical Physics, 51(4), 3101-3109. https://doi.org/10.1002/mp.16972

Recent Appointment

CDI Director of Design & Innovation, **Mike Lovas**, received the **AMS-Fitzgerald Fellowship in Artificial Intelligence (AI) and Human-Centred Leadership**. The fellowship, created in partnership with the Dalla Lana School of Public Health, is a two-year professional learning fellowship for health system leaders who are driven to develop knowledge, skills, and capacity to meet the opportunities and challenges of AI in health care, public health, and health systems.

CDI Governance

Leadership Team

Alejandro Berlin, Medical Director

Benjamin Haibe-Kains, Scientific Director

Luke Brzozowski, Partnership Lead

Tran Truong, Director, Data & Technology

Kelly Lane, Director of Operations & Projects

Mike Lovas, Director of Design & Innovation

Tony Tadic, Imaging Platform Lead

Mattea Welch, Staff Scientist

Benjamin Grant, Manager

Executive Oversight Committee

Keith Stewart, VP, Cancer, UHN and Director, Princess Margaret Cancer

Aaron Schimmer, Research Director, Senior Scientist, Princess Margaret Cancer Centre

Bradly Wouters, Executive Vice President, Science and Research, UHN

CDI Leadership Team

Partners

Cancer Care Quality & Innovation (CQIN)

Techna Institute (TECHNA)

UHN AI Hub

CDI Advisory Oversight Committee

Clinical Practice and Operations

Jennifer Catton, Clinical Director, Cancer

Anet Julius, Professional Practice

Monika Krzyzanowska, Chair of Clinical Practice & Quality

Clinician Researchers

John De Almeida, Clinician Investigator (Surgery)

Camilla Zimmermann, Senior Scientist (Supportive Care)

Robert Grant, Clinician Scientist (DMOH)

Basic Researchers

Mathieu Lupien, Senior Scientist

Hansen He, Senior Scientist

Trevor Pugh, Senior Scientist

Education

Meredith Giuliani, Director of Cancer Education

Patient & Caregiver Partners

Elizabeth Scott, Caregiver Partner

UHN Digital and Other Partners

Justin Aling, Patient Partner

Michael Brudno, Chief Data Scientist

Asif Saleh, UHN Digital

Mary Gospodarowicz, Advisor

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The Princess Margaret Cancer Foundation UHN

Acknowledgments

We would like to recognize and thank Tripti Saha, Adam Badzynski, and Kelly Lane for their dedication and work on this year's impact report.

We also extend a special thank you to the CDI team, whose support made this report possible. Thank you to Alejandro Berlin, Luke Brzozowski, Stacie Carey, Shayla Devonish, Alex Gegolas, Paige Gilbank, Benjamin Grant, Benjamin Haibe-Kains, Helena Hyams, Melissa Kozak, Mike Lovas, Sharon Narine, Faiza Somji, Katherine Sue, Tony Tadic, Tran Truong, and Mattea Welch.

www.pmcdi.ca

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