

2023-2024

# ANNUAL REPORT

Radiation Medicine Program



**UHN**

Princess  
Margaret  
Cancer Centre

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# MESSAGE FROM THE HEAD



I am honoured to lead the Radiation Medicine Program (RMP) at The Princess Margaret as Head of RMP and Head of Radiation Oncology at University Health Network (UHN). My deepest gratitude goes to Team RMP for their dedication and unwavering support. I also extend my thanks to past and present leaders whose collaboration has been instrumental in our success, including **Yat Tsang**, Director of Radiation Therapy, **Jan Seuntjens**, Head of Medical Physics, and **Colleen Dickie**, Director of Operations, alongside whom I lead our dynamic and talented multidisciplinary team of radiation oncologists, medical physicists, radiation therapists, nursing, allied health, administrative, and support staff. Special appreciation goes to my predecessors, **Fei-Fei Liu** and **Richard Tsang**, for their foundational contributions, as well as to departing and retiring team members whose leadership transitions have created new opportunities—such as **Alejandro Berlin** succeeding **Mike Milosevic** as Director of Research and **Rachel Glicksman** replacing **John Waldron** as Director of Quality and Safety.

This annual report acknowledges and celebrates RMP's achievements in clinical care, research, and

education. Since launching our ***Strategic Roadmap to 2026—Revolutionizing Radiation Care through Digital Health***—RMP has made significant progress toward our shared vision: Precision Radiation Medicine. Personalized Care. Global Impact. This report highlights key milestones from 2023–2024, reflecting our commitment to innovation and excellence.

RMP remains one of the largest single-site radiation medicine programs globally, providing 9,438 patient consultations and 7,545 protocol instances in the 2023–2024 fiscal year. It is a privilege to collaborate with our talented multidisciplinary team, leveraging state-of-the-art technology to care for cancer patients. Guided by our strategic roadmap and global reputation as a leader in radiation medicine research, education, and treatment, we continue advancing adaptive radiotherapy through four priority areas: Treatment with Ring-Based Technology, Radiation Oncology Information System (ROIS) Evaluation Working Group, Proton/Particle Therapy, and Theranostics. With the installation of Ethos for online adaptive treatment, we reaffirm our commitment to transforming patient care through technology upgrades and building comprehensive programs in particle therapy, and theranostics. In recognition of RMP's accomplishments in theranostics, we were designated a Comprehensive Radiopharmaceutical Therapy Center of Excellence by the Society of Nuclear Medicine and Molecular Imaging. Special thanks to **Rebecca Wong** for leading our efforts to expand theranostics at The Princess Margaret (UHN).

Through the hard work and dedication of our team, we met Cancer Care Ontario – Ontario Health's

critical metric, evaluating at least 85% of patients within two weeks of referral and initiating treatment within two weeks of CT simulation.

RMP continues to lead cutting-edge adaptive radiotherapy research, advancing personalized and precision-based treatment. In 2023–2024, our multidisciplinary teams, led by RMP investigators, secured competitive funding from CIHR, Brain Tumour Foundation, NSERC, CAMRT, and TFRI. Notable projects include: *Micronuclei as integrators of cellular DNA damage responses* (PI: **Shane Harding**), *RT-ChatGPT: AI-Powered Radiotherapy Guidance for Cancer Treatment* (PI: **James Chow**), *Supporting Oncology Caregivers: A Distress Assessment & Response Program* (Co-PI: **Jennifer Croke**), *Enhancing Pancreatic Cancer Radiosensitivity with Oxygen-Loaded Nanodroplets* (Co-PI: **Marianne Koritzinsky**), *Equity & Economics in Breast Cancer Control: A Priority-Setting Framework for India* (Co-PI: **Danielle Rodin**), *AI in Radiotherapy: Bridging the Gap from Computer to Clinic for Brain Tumours* (PI: **David Hodgson** and Co-PI: **Derek Tsang**), *Neurocognitive Function & Quality of Life in Brain Metastases: Insights from a Longitudinal Study* (PI: **David Shultz**), *Polymerized Diacetylene Crystals: A Novel Approach to Ionizing Radiation Dosimetry* (PI: **Alexandra Rink**), *Image-Guided Adaptive Radiation Therapy in Canada: Roles & Recommendations for Radiation Therapists* (PI: **Winnie Li**), and *Targeting Immunosuppression in Neuroendocrine Tumors: A Preclinical Basket Study* (Co-PI: **Benjamin Lok**). In April 2024, our research teams convened for a successful retreat to discuss current and emerging projects, fostering collaboration and innovation.

Team RMP were also recognized with prestigious awards and appointments. **Kathy Han** received

the 2023 ASTRO Press Program Award, while **Derek Tsang** and **Sophie Huang** were honoured with UTDRO's Best Annual Research Performance and Excellence in Research Awards, respectively. **Jillian Tsai** was awarded the 2023 Princess Margaret Till and McCulloch Paper of the Year – Clinical, and **Benjamin Lok** received the Ontario Research Fund Early Career Investigator Award. Additionally, **Robert Weersink** was recognized by the Canadian Organization of Medical Physicists for Second Best Poster Presentation, and **Monica Serban** won the CARO 2023 Best Abstract Award.

RMP's innovative education programs continue to provide exceptional training across the professional spectrum. In 2023–2024, the Accelerated Education Program (AEP) completed its ninth SBRT-focused course, welcoming learners from Asia, Europe, Oceania, and North America. We hosted 48 international observers from 15 countries, along with talented colleagues and trainees. By training a diverse group of radiation medicine professionals and students, we are advancing global cancer education and care and improving patient outcomes worldwide.

## Looking Ahead

This report is a testament to the dedication, expertise, and collective impact of Team RMP. Across clinical care, research, and education, our team continues to set new standards, shaping the future of radiation medicine. It is a privilege to lead such an exceptional group of professionals, united by our shared mission—to provide outstanding patient care, train the next generation, and drive groundbreaking discoveries that improve outcomes for

cancer patients worldwide. As we move forward, we remain committed to innovation, collaboration, and excellence. With the rapid evolution of radiation medicine and the opportunities ahead, I am excited for what we will accomplish together. Thank you for your dedication and contributions to another outstanding year—let's keep the momentum and build on our success in the years to come.

Warm regards,



**David Kirsch, MD, PhD, FASTRO, FFAAS**  
Head, Radiation Medicine Program, Princess Margaret Cancer Centre  
Head, Department of Radiation Oncology, University Health Network

# PROGRAM OVERVIEW

The Radiation Medicine Program (RMP) at the Princess Margaret Cancer Centre is the largest radiation treatment centre in Canada and one of international acclaim. RMP is organized into the three core disciplines of radiation oncology, medical physics, and radiation therapy; each supported by robust clinical, research, administrative, and technical teams. Together, this multi-professional group of over 400 staff work collectively to deliver high quality radiation treatment to over 6,500 cancer patients every year.

RMP has a diverse pool of talent, with many staff holding important leadership roles in patient-centered care, research, and education at the local, national, and international levels. Our research program, which spans from biological studies, translational biology, medical physics, clinical trials, to health services and education research, aims to innovate and advance radiation medicine practice, producing over 310 peer-reviewed publications annually.

Our interdisciplinary environment facilitates the delivery of innovative education programs covering the entire spectrum of professional learning in radiation medicine. RMP offers training at the undergraduate, graduate, and postgraduate levels in collaboration with the University of Toronto and Michener Institute of Education at UHN, as well as continuing medical education through our Observer-ship and Accelerated Education Program (AEP).

Our multi-talented, inter-professional staff enables all aspects of our program to succeed. Led by the Program Head, the RMP Steering Committee defines the principles of operation and policies of governance for the management of clinical care, quality assurance and safety, research, educational, operational, and IT activities.

# VISION

Precision Radiation Medicine. Personalized Care. Global Impact.

# MISSION

To advance exemplary radiation medicine through patient care, research, and education in partnership with our patients and community.



## CURE

Predictive Health  
& Adaptive  
Radiotherapy



## COMFORT & CONFIDENCE

Technology-enabled  
Patient Experience  
Transformation



## EVOLVE

Advanced  
Particle Therapy  
& Theranostics



## CONNECT

Systems to  
Maximize Innovation  
& Wellbeing

# VALUES

Accountability

Excellence

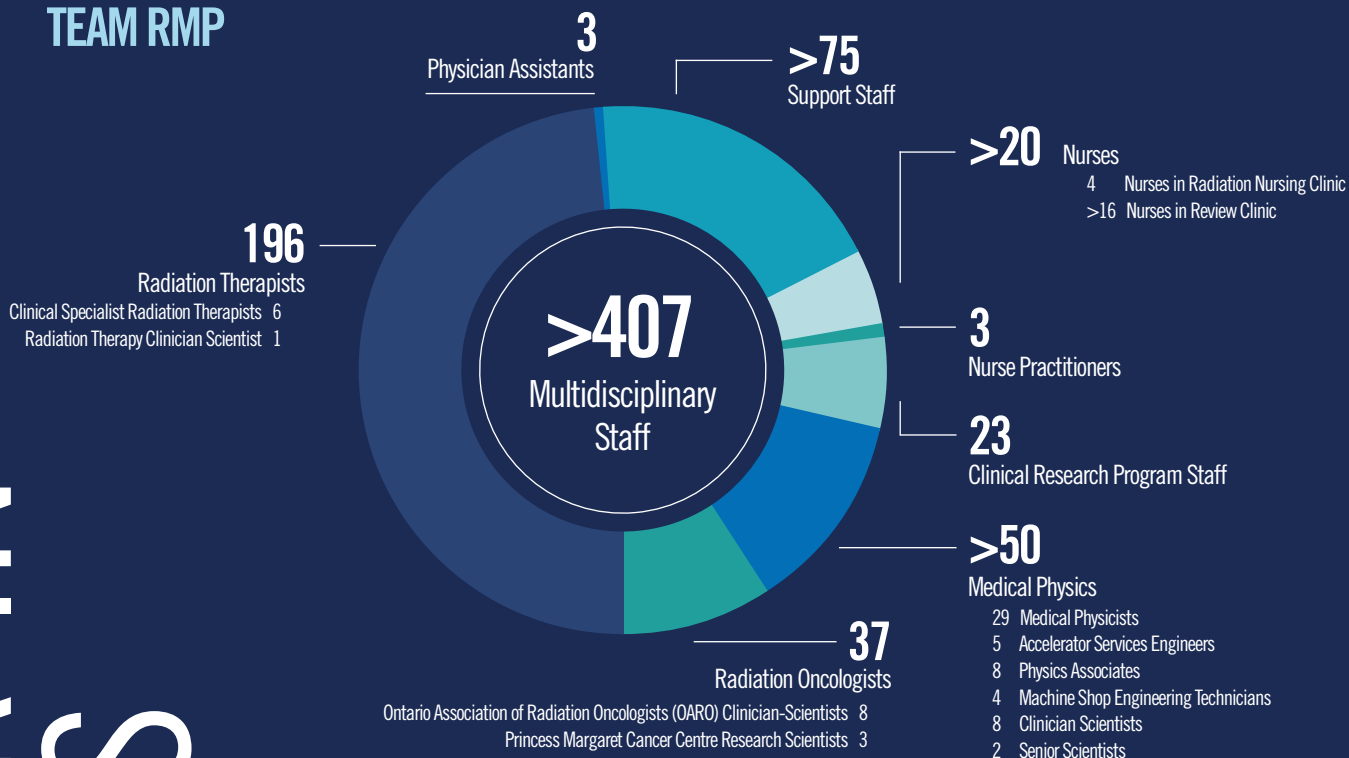
Collaboration

Innovation

Integrity

# OUR YEAR IN NUMBERS

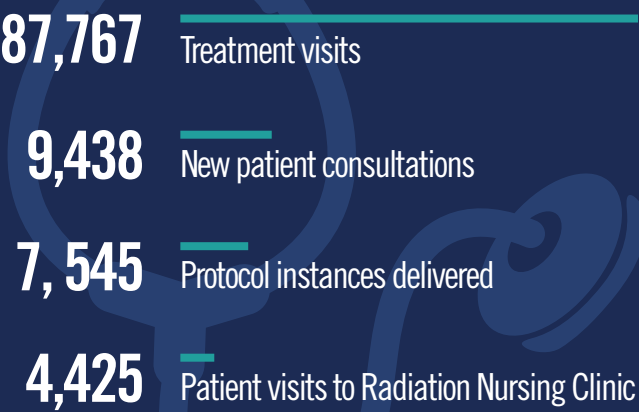
## TEAM RMP



## STATE-OF-THE-ART FACILITY

15	Linear accelerators	2	Brachytherapy high dose rate (HDR) remote afterloaders
1	Leksell Gamma Knife ESPRIT unit	1	Magnetic resonance-guided radiation therapy (MRgRT) facility
1	Leksell Gamma Knife ICON unit	1	MR-Linac facility
3	CT simulators		
1	MRI 3T simulator		
1	Orthovoltage/Superficial X-ray unit		

# CLINICAL CARE



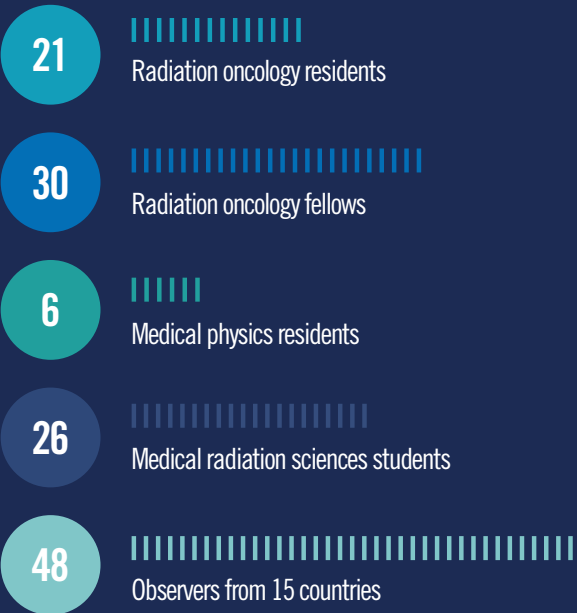
Fiscal year statistics

# GOVERNANCE



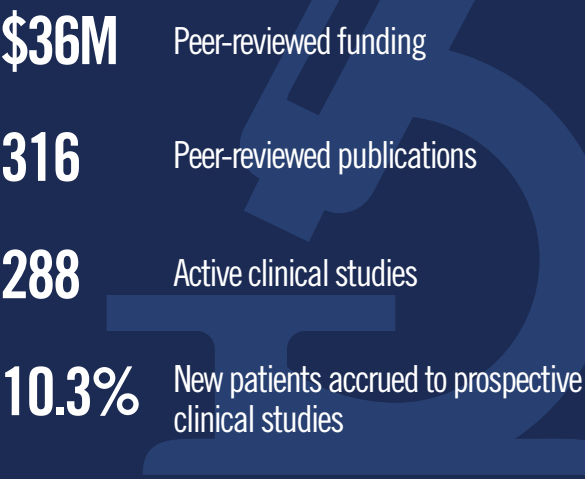
As of 2024

# EDUCATION



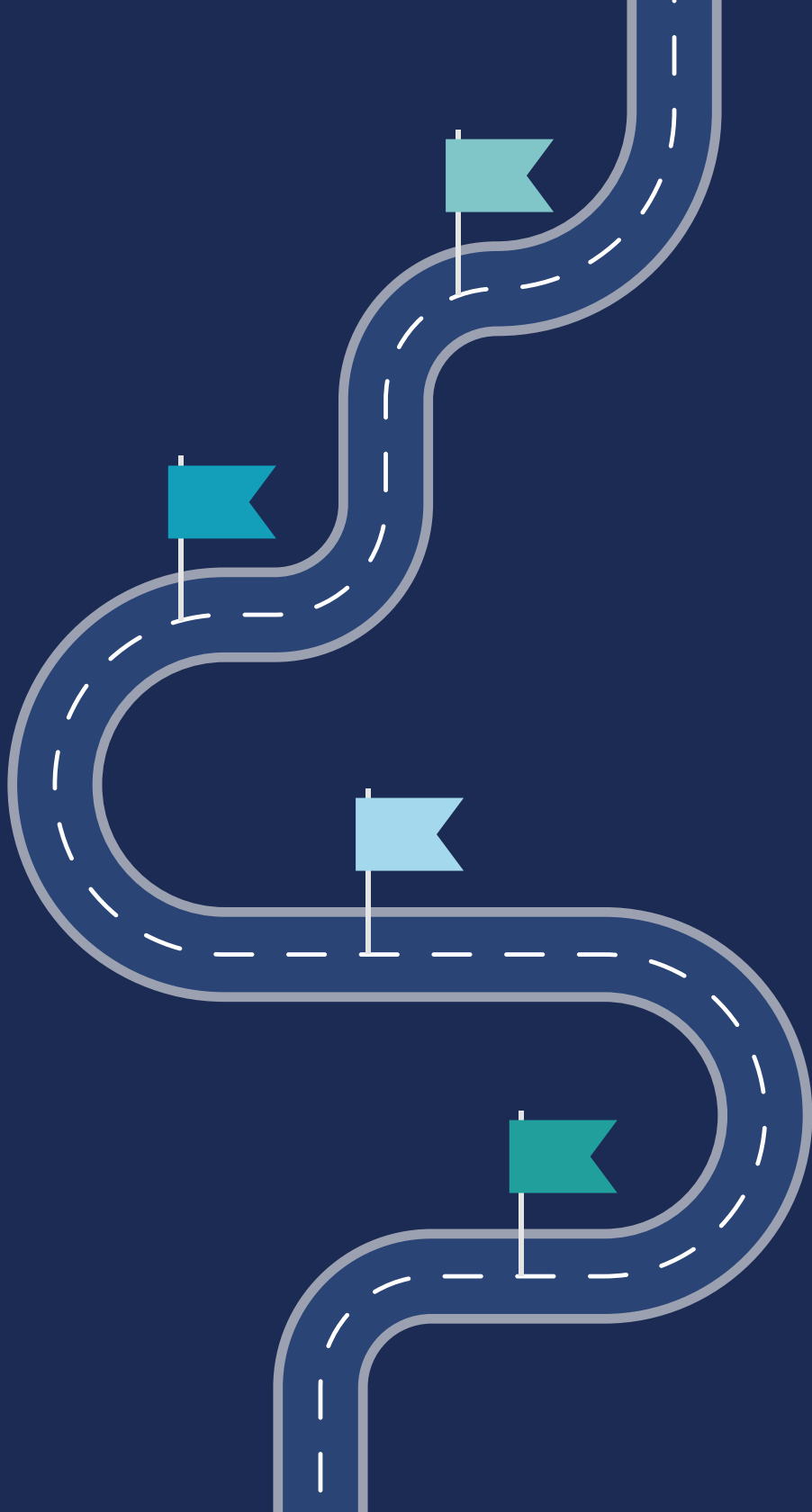
Academic year statistics

# RESEARCH



Calendar year statistics

# STRATEGIC ROADMAP TO 2026



## A YEAR IN REVIEW

Thank you to the continued support of the Princess Margaret Cancer Centre and the Princess Margaret Cancer Foundation in helping us to achieve our strategic goals

Since the launch of the **Strategic Roadmap to 2026** in 2021, RMP has focused on implementing several key initiatives and activities in Year 3 to help achieve our four strategic priorities to:

1. Empower predictive health and accelerate response-driven adaptive radiotherapy;
2. Enhance personalized, equitable, compassionate care through a technology-enabled patient experience transformation;
3. Establish a centre of excellence in advanced particle therapy and theranostics; and
4. Elevate systems to maximize innovation and well-being.

Thank you to the continued support of **Keith Stewart**, who leads the Princess Margaret Cancer Centre; and the Princess Margaret Cancer Foundation, led by **Miyo Yamashita**, with RMP support from **Connie Tsui**, in helping us to achieve our strategic goals. Key highlights from 2023-2024 are shown.

### Proton/Particle Therapy

RMP continued its work towards a first-in-Canada hospital-based proton/particle therapy centre in collaboration with Ontario Health – Cancer Care Ontario, Sicks Kids, Pediatric Oncology Group of Ontario (POGO), and the University Health Network.

The team developed and submitted the Stage 1.3 Functional Program to the Ontario Ministry of Health on July 24, 2023. As part of the submission the team developed:

- A proposal for novel post-occupancy evaluation for proton/particle therapy including plans for:
  - A registry and dynamic consent process to collect health outcomes;
  - Evaluation of the effectiveness and accessibility of proton/particle therapy;
  - A report on capital return on investment in the facility
- An operational costing model

RMP responded to the first round of comments on the Stage 1.3 submission from the Ontario Ministry of Health on March 12, 2024.

## Advances in Theranostics

As part of a multidisciplinary collaboration, RMP has continued to make advancements in theranostics offering at the University Health Network. A team of oncologists, radiologists, scientists, medical physicists, and radiation therapists, as well as other research staff continue their work to translate new theranostic agents from the lab to clinic.

The Princess Margaret Bruce Power Seed Grant was launched in 2023 and received six applications. This was designed to encourage and enable trainees to engage in the field of theranostics. One of the two funded projects was from RMP, entitled *Remodeling the Multi-Fraction Theranostic Clinical Pathway to provide Seamless patient Focused Care*.

In clinical practice, we delivered 62 cycles of Lu177 Dotatate in Neuroendocrine patients with about half of our patients being treated on compassionate access in orphan sites, retreatments, in addition to established practices in Ra223, I131. Together with team UHN, we contributed to many hours of planning for:

- The future UHN Radiotheranostics Centre
- The inaugural Canadian Radiotheranostics Leaders' Summit planned for June 2024
- Advocacy for infrastructure and access to theranostics for Canadians

The Clinical Research Program provided substantive support to the growing portfolio of radiotheranostics trials. In recognition of RMP's accomplishments, we received the designation of Comprehensive Radiopharmaceutical Therapy Center of Excellence by the Society of Nuclear Medicine and Molecular Imaging.

## Radiation Oncology Information System (ROIS) Evaluation Working Group

In September 2023, RMP Steering tasked a multidisciplinary internal working group with evaluating the main Radiation Oncology Information System (ROIS) offerings on the market. An ROIS is a software environment that records and verifies radiation dose and supports the delivery of integrated care and treatment. The group looked at offerings by Elekta, Varian, and RaySearch. Membership included representation from Radiation Oncology, Radiation Therapy, Medical Physics, and Digital, led by **Mary Grossutti**, Manager, Program Development and Strategic Partnerships.

The group completed preliminary scoping, department-wide town halls, and engagement with vendors, including half-day in-person presentations. This provided the necessary data to complete a high-level evaluation which was presented to RMP Steering in January 2024, fulfilling the working group's mandate.





Halcyon Team

## The Halcyon Goes Live: RMP Begins Treatment with Ring-Based Technology

In August 2023, RMP went live with Halcyon for image-guided radiation therapy (IGRT) treatment. This first use of ring-based technology at the Princess Margaret Cancer Centre marks a step forward in high quality treatment efficiency.

The Halcyon is able to speed up treatment with many completed within ten minutes. This improved efficiency means more patients are able to receive their radiation treatment every day on this unit.

The first use of ring-based technology at the Princess Margaret marks a step forward in high quality treatment efficiency.

CLINICAL  
CARE



## OUR ACHIEVEMENTS IN 2023-24

Our inter-professional team works collaboratively to assess, plan, and deliver personalized care to our patients

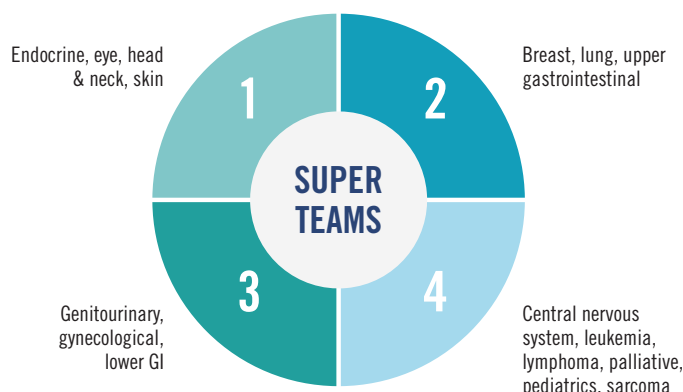
The Radiation Medicine Program's clinical practice encompasses all aspects of cancer care – from diagnosis to survivorship.

In 2023–2024, RMP provided 9,438 patient consultations and delivered 7,545 protocol instances. As well, there were 4,425 visits to the Radiation Nursing Clinic (RNC) for symptom and side effect management. In total, RMP had 87,767 patient treatment visits.

Our clinical practice is integrated into four multi-disciplinary Super Teams comprised of anatomically related tumour site groups. Standardized treatment protocols that relate to evidence-based disease management guidelines are used by each site group to plan and treat patients.

In addition to site groups, a number of specialized programs exist to further support individualized care in a subset of patients. Together, our inter-professional team works collaboratively to assess, plan, and deliver personalized care to our patients.

### Clinical Practice



### SPECIALIZED PROGRAMS

Brachytherapy  
Gamma Knife Radiosurgery  
Palliative Radiotherapy and Oligometastasis  
Pediatric Radiation Therapy  
Stereotactic Radiation Therapy



## RMP Welcomes Ethos and HyperSight Technology

In 2024, the Princess Margaret became the first radiation department in Canada and one of the first in the world to acquire HyperSight imaging technology on a C-arm linear accelerator. HyperSight imaging provides diagnostic-quality CT images to monitor changes in the tumour during treatment. Together with the implementation of Ethos on-line adaptive technology, this cutting-edge technology positions us to be a world leader in precise, personalized, and adaptive cancer care for patients.

Our clinical teams perform a cone-beam CT (CBCT) before every daily radiation treatment to ensure patients are set up with high precision. A CBCT helps guide focused delivery of radiation to the tumour while limiting exposure to healthy surrounding tissue. CBCT allows us to define a tight perimeter around the tumour with millimeter accuracy to ensure the tumour is getting the prescribed radiation dose.

In contrast, standard CBCT on a C-arm linear accelerator takes a minute or more to acquire, which creates artifacts and can make it challenging to differentiate soft tissues adjacent to the tumor. This makes it difficult to modify the radiation plan to

adapt to changes in tumour shape and position over time. This is where HyperSight imaging comes in. HyperSight is a new CBCT technology that acquires a daily CT scan in six seconds on the Halcyon treatment machine. With HyperSight, we can visualize anatomical changes with the resolution of a diagnostic CT scan to facilitate updating the radiation therapy plan during a course of radiation therapy without a separate diagnostic CT scan.

RMP is going one step further in adaptive, personalized cancer care by installing the Ethos therapy system. The typical radiotherapy re-planning workflow involves pausing treatment for a few days while the oncologist creates a new radiation plan. In contrast, the Ethos system combines HyperSight imaging with an “on-the-fly” re-planning software that can adapt

a radiation plan to a patient’s anatomy on the day of treatment. Ethos can do this within 15 minutes, compared to the several hours (or days) typically required for re-planning. Adapting the radiation plan to changes in size, shape, and location of tumour and/or normal tissues during a course of treatment may lead to substantial gains for cancer patients. More precise radiation delivery can lead to fewer acute side effects and long-term toxicity, and therefore improved patient outcomes and quality of life.

With our investment in HyperSight and Ethos technologies, RMP is advancing our pursuit of personalized cancer care to ensure that patients receive tailored treatment for the best possible health outcomes.

## UHN Local Impact Awards

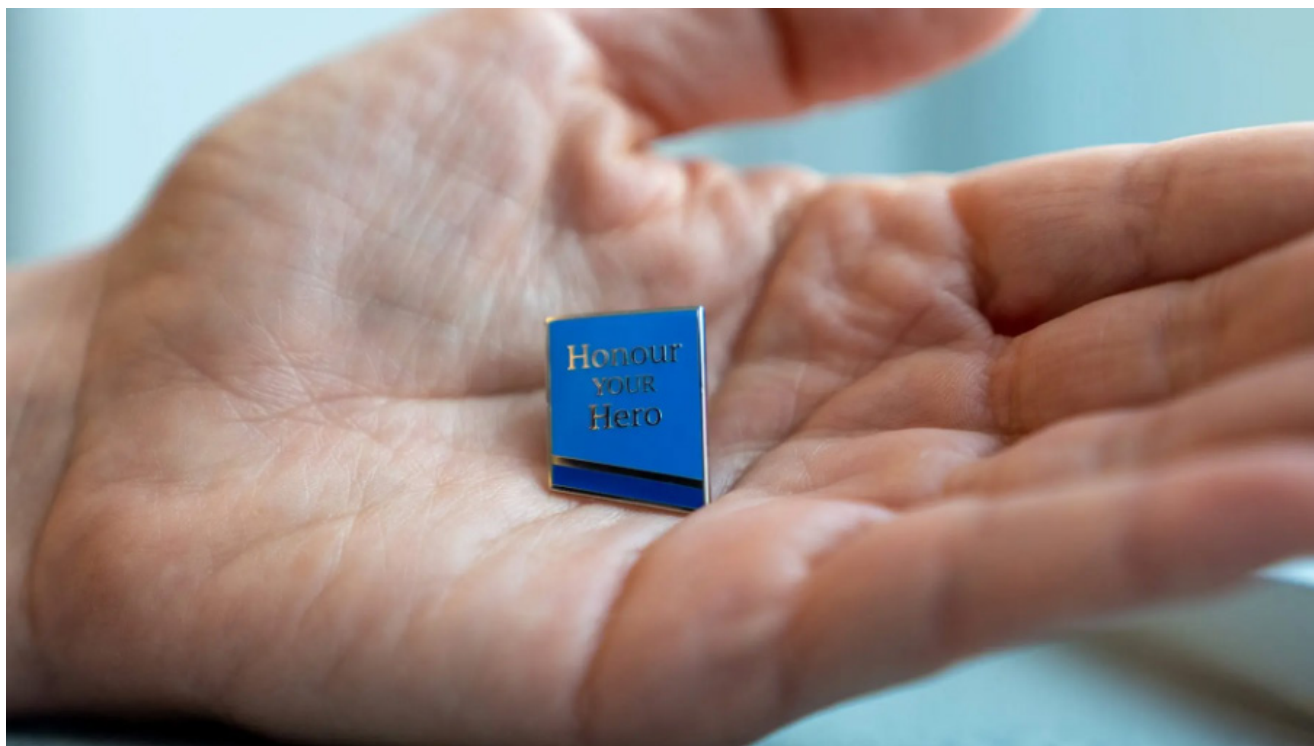
The winners of the 2023 UHN Local Impact Awards were announced during the TeamUHN Week of Gratitude on November 8, 2023. The Local Impact Awards recognize outstanding individuals and teams who advance UHN’s strategic pillars.

Congratulations to RMP’s multidisciplinary **Magnetic Resonance Linear Accelerator (MRL) Team**, who won the 2023 UHN Local Impact Team Award in the category Convergence.

This category is awarded to individuals and teams that have developed new models of collaboration

to accelerate the translation of research into clinical practice, harnessing the collective power of Canada’s academic health sciences ecosystem.



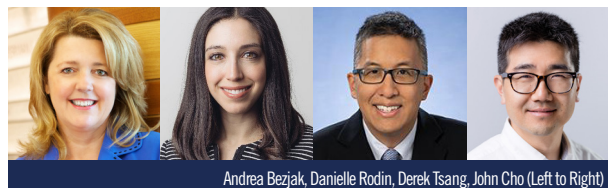


## Celebrating Excellence in Patient Care

Radiation Oncologists **Andrea Bezjak**, **Danielle Rodin**, and **Derek Tsang** were named honourees of the UHN Foundation's Honour Your Hero Program for the May – October 2023 period. Honour Your Hero provides opportunities for patients, families, and caregivers to make a donation in gratitude to UHN hospital staff who demonstrate compassionate patient care.

2023 marked the 24<sup>th</sup> annual Gerald Kirsh Humanitarian Awards, which were initiated by the Kirsh family as a tribute to their father and husband,

Gerald Kirsh, a former patient at The Princess Margaret. These awards recognize PM staff and volunteers across PM who go above and beyond to provide exceptional compassionate care for patients and their families. Congratulations to Radiation Oncologist **John Cho**, who was nominated for the award. Past RMP recipients include **Adrian Fung** (2022), **Jennifer Croke** (2020), **David Shultz** (2019), **Alejandro Berlin** (2017), **Sandra Scott** (2015), and **Wilfred Levin** (2008).



## The Halcyon Goes Live

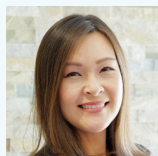
On August 15, 2023, the Halcyon unit was opened for clinical implementation and was used to treat two patients with prostate and head and neck cancer. The Halcyon implementation project began in 2022 with the renovation of Unit 1 bunker. In March 2023, the linear accelerator was installed. This was followed by six months of equipment commissioning and clinical workflow development, including commissioning of new systems such as the treatment delivery unit, radiation oncology information system (ROIS), and treatment planning system (TPS). The Halcyon machine, systems Aria and Eclipse, and a new Raystation beam model were released for clinical use for prostate and post-operative head and neck cancer.

We thank the talented, hard-working, and collaborative multi-disciplinary Team RMP who completed this project within scope, schedule, and budget. Special shout-outs to **Jeff Winter, Tim Craig, Patricia Lindsay, Leigh Conroy, Tony Tadic, Karen Tse, Anthony Lausch, Monica Serban, Robert Heaton, Raina Park, Bern Norrlinger, Nurul Amin, Salomeh Jelveh, George Parsons, Paul Kwan, Ryan Hyvarinen, Natassia Naccarato, Jennifer Dang, Tony Lam, Michael Mangat, Michael Holwell, Stuart Rose, Andrew McPartlin, Angela Cashell, Hedi Mohseni, Edward Taylor, Doris Leung, and the Medical Physics Residents**, as well as **Colleen Dickie, Daniel Letourneau, and Catarina Lam** who provided leadership and oversight.

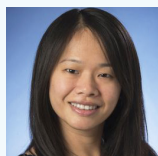


Halcyon Team

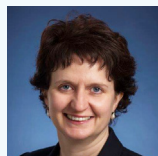
## Leadership Appointments



**Letizia Cheung** was appointed as Radiation Therapy Manager – Strategic Operations, effective June 2023. Letizia was also appointed as Co-Chair of the Radiation Therapy Professional Advisory Committee (RTPAC) of Cancer Care Ontario, effective November 2023.



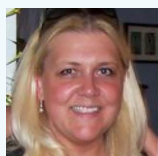
**Winnie Li** was appointed as Radiation Therapy Manager – Professional Practice, effective June 2023.



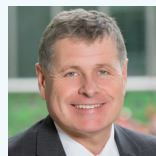
**Barbara-Ann Millar** was appointed as Central Nervous System (CNS)/ Eye Multidisciplinary Clinical Lead, effective January 2024, succeeding Normand Laperriere.



**Marcia Bowen** was appointed Business Manager effective December 2023.



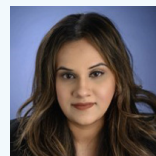
**Maureen Savage** was appointed Interim Team Lead effective May 2023, and Patient Flow Coordinator (PFC) Acting Administrative Team Leader in May 2023.



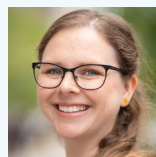
**John Waldron** was appointed as Director of Clinical Operations, effective July 2023. John was also re-appointed as the Bartley-Smith/Wharton Chair in Head & Neck Radiation Oncology for a second five-year term, effective January 2024.



**David Hodgson** was appointed as Lymphoma Site Group Leader, effective July 2023, succeeding Richard Tsang.



**Fayaza Syed** was appointed Interim DRO Administrative Services Supervisor effective December 2023 and Administrative Assistant III in September 2023.



**Mary Grossutti** was appointed as Manager, Program Development and Strategic Partnerships, effective July 2023.



**Karen Tse** was appointed Program Development and Implementation Lead effective April 2024.



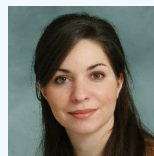
**Jane DeRocchis** was appointed as Radiation Therapy Team 2 Reference Planner (June 2023)



**Devin Hindle** was appointed as Head & Neck Clinical Specialist Radiation Therapist (August 2023)



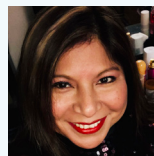
**Lily Chau** was appointed as Radiation Therapy Team 1 Reference Planner (June 2023)



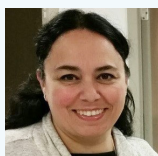
**Alana Pellizarri** was appointed as Radiation Therapy Upper GI Site Leader (November 2023)



**Carla Cerase** was appointed as Radiation Therapy Endocrine & Ocular Site Leader (June 2023)



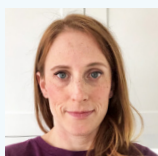
**Jenny Vargas** was appointed as Administrative Coordinator (September 2023)



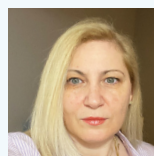
**Lorella Divanbeigi** was appointed as Radiation Therapy Team 4 Supervisor (July 2023)



**Shakira Agun** was appointed as Administrative Assistant III (September 2023)



**Tatiana Ritchie** was appointed as Radiation Therapy Pediatric Site Leader (July 2023)



**Eliona Mino** was appointed as Administrative Assistant III (September 2023)

# QUALITY AND SAFETY



## OUR ACHIEVEMENTS IN 2023-24

Quality means we work continuously to improve care – guided by the latest research, informed by expert standards, and inspired by the patient journey

The RMP Quality Committee (RMP QC) functions to monitor, analyze, report, and make recommendations on all aspects of radiation treatment quality and safety within RMP. The committee reports to the RMP Steering Committee, which in turn reports to the Princess Margaret Cancer Program Quality Committee. The RMP QC aims to exceed national and international safety standards and oversees a quality-monitoring program for the department covering the following four domains.

1. **Performance Indicators** aimed at evaluating compliance with relevant standards
2. **Quality Assurance** aimed at monitoring radiation treatment quality control processes
3. **Quality Education** aimed at contributing to quality and safety competence through education
4. **Incident Learning** aimed at improving quality and safety through follow-up of reported events



## Accreditation Preparation

RMP began preparing for Accreditation in March 2023 by assessing RMP's practices against all Cancer Care Required Organizational Practices and High Priority Standards.

An action plan was developed and implemented to address minor deviations identified through mock tracers with environmental scans. RMP also developed and implemented an action plan to raise awareness and increase staff engagement with Accreditation via a dedicated Accreditation webpage, Communication Blitzes, and Leadership Rounding.

## Patient Education Materials

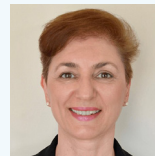


In partnership with **Angela Cashell**, RT Clinical Educator, the Quality Committee made meaningful changes to the patient waiting area by adding some slides to the screens, which not only provided patient education but also provided information to patients on how RMP aims to use the latest research and standards to improve patient care and experience. The slides invited patients to complete Your Voice Matters surveys, to join the Patient Partnership Program, and/or to provide feedback to the care team or to Patient Relations. Additionally, updates were made to patient education pamphlets.

## Leadership Appointments



**Rachel Glicksman** was appointed as the RMP Director of Quality and Safety, effective April 1, 2024. Rachel served as Associate Director of Quality and Safety in RMP since 2021 and is a Co-Lead of our MR safety team. Rachel will join our core multidisciplinary quality team including members Lyndon Morley and Leigh Conroy. We thank John Waldron who served exceptionally as our Director of Quality and Safety for many years.



**Anna Simeonov** was promoted to Supervisor of magnetic resonance (MR) Safety in MR Simulation & MR-guided RT, effective December 4, 2023.

## MR Safety Committee

The MR Safety Committee provided continuous oversight and direction on all issues pertaining to MR safety, MR imaging and related processes across RMP's three dedicated MR facilities: MRgRT, 3T MR-simulator, and the MRL.

The committee has reviewed and updated all existing MR safety policies and developed one new policy to reflect current MR safety practices. Nine new research study protocols have been reviewed for MR imaging feasibility and clinical impact assessment, to ensure the capability of the MRI systems meet the RMP standards of practice and the objectives of the research studies.

Four MR safety incidents were reported, all were near-misses and no harm to patients or staff has accrued. Recommendations have been submitted for further improvements to the department MR safety screening procedures.

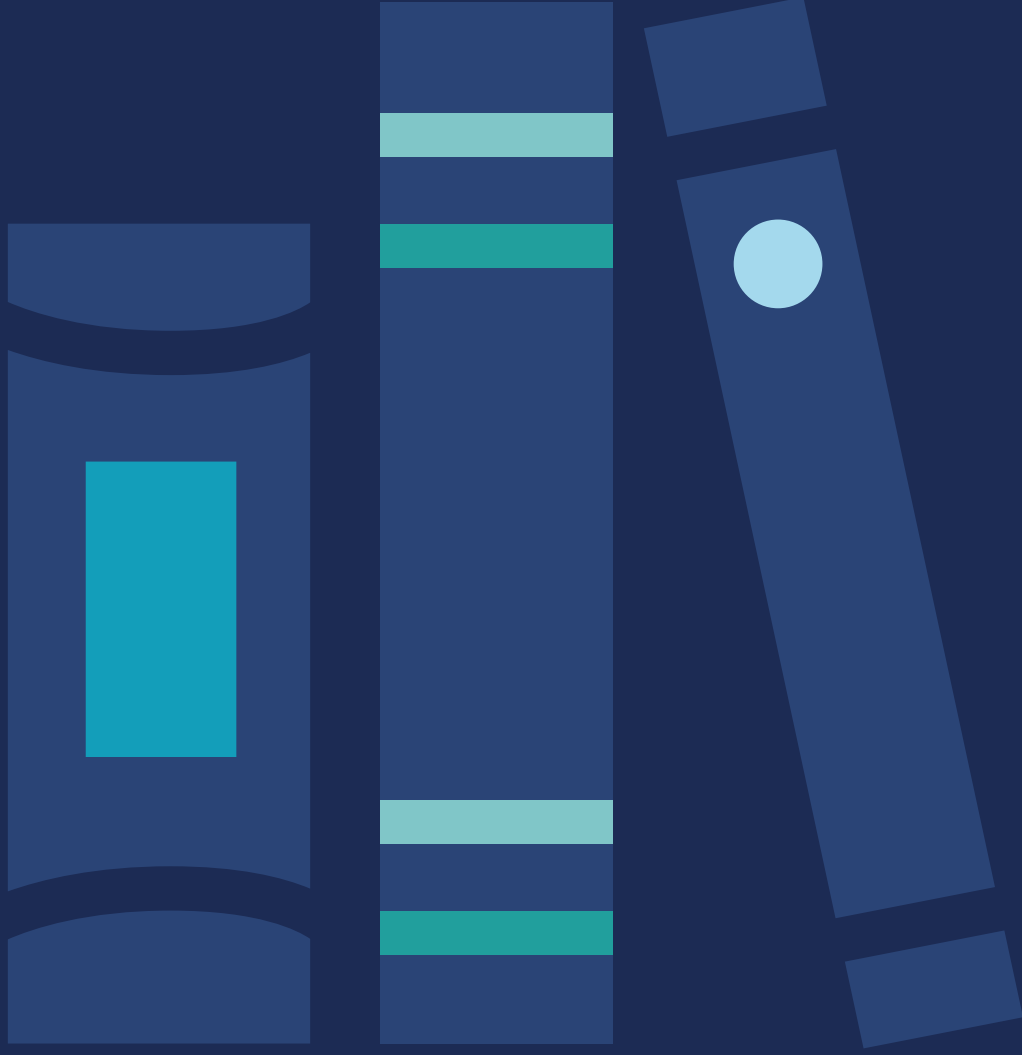
The committee has met on a monthly basis to discuss MR safety concerns and provide recommendations in regards to a few major projects:

1. The decommissioning of the 1.5T system in MRgRT facility and provide support to the redevelopment team.
2. The safe installation of the medical gases in the MRL unit.
3. 3T MR sim software, hardware upgrade and protocols update. Staff training and transition are completed without clinical impact.

The MR Safety Committee will continue to re-evaluate and work on improving the MR screening process workflow, monitor MR safety compliance, review incidents and provide preventive measures and support to all site groups.

The MR Safety Committee provides continuous oversight and direction on all issues pertaining to MR safety, MR imaging and related processes across RMP's three dedicated MR facilities.

# EDUCATION



## OUR ACHIEVEMENTS IN 2023-24

### RMP provides one of the most comprehensive clinical settings for the formal training of radiation oncologists, medical physicists, and radiation therapists

As one of the largest radiation medicine programs in North America, RMP provides one of the most comprehensive clinical settings for the formal training of radiation oncologists, medical physicists, and radiation therapists. RMP's education portfolio is closely aligned with that of the University of Toronto Department of Radiation Oncology (UTDRO) as a fully affiliated teaching hospital of the Temerty Faculty of Medicine. This strategic alignment enables the optimal utilization of educational expertise and infrastructure, while facilitating the achievement of the central education mandate of RMP and UTDRO.

The formal professional training programs include undergraduate training for radiation therapy (BSc Medical Radiation Sciences); post-graduate training programs for radiation oncology residency, radiation oncology fellowship, and medical physics residency; as well as the Strategic Training in Transdisciplinary Radiation Science for the 21st Century (STARS21) Training Program. RMP staff also teach residents and fellows from other training programs, as well as graduate students from University of Toronto departments, including the Institute of Health Policy, Management and Evaluation; Dalla Lana School of Public Health; Nursing; Institute of Medical Science; Institute of Biomaterials & Biomedical Engineering; and Medical Biophysics.

RMP offers interdisciplinary continuing education catering to practicing radiation medicine professionals who seek to acquire informal or structured learning experiences at the Princess Margaret, including the RMP Observership Program; the Accelerated Education Program, which delivers in-depth structured 2-3 day courses; and the Personalized Learning Program™ (PLP™) in Radiation Medicine, which offers 3-6 months of on-site and online learning opportunities.

### Diverse Learners

#### UNDERGRADUATE

- 26 BSc Medical Radiation Sciences students
- 29 Undergraduate Medical Education students
- 3 CARO-CROF students
- 17 Summer students

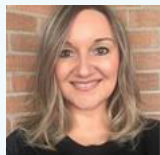
#### POST-GRADUATE

- 21 Radiation oncology residents
- 30 Radiation oncology fellows
- 6 Medical physics residents
- 26 STARS21 scholars

#### CONTINUING EDUCATION

- 48 Observers from 15 countries
- 44 AEP participants
- 7 Personalized Learning Program participants

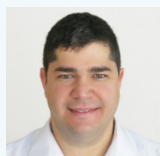
## Leadership Appointments



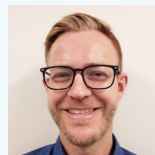
**Renata Czech:** Appointed as Education Coordinator II (CAMPEP Accredited Medical Physics Graduate Program and Physics Residency Program) in July 2023



**Srinivas Raman:** Appointed as Director, Undergraduate Medical Education at UTDRO in July 2023



**Aruz Mesci:** Appointed as Associate Director, Radiation Oncology Residency at Princess Margaret Cancer Centre in July 2023

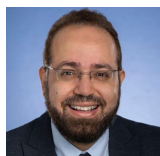


**Anthony Lausch:** Appointed as Associate Program Director, Physics Residency Program at Princess Margaret Cancer Centre in January 2023



**Andrew McPartlin:** Appointed as Associate Director, Radiation Oncology Research Residency at UTDRO in May 2023

## Academic Appointments



**Ali Hosni:** Promoted to rank of Associate Professor at UTDRO (July 2023)



**Jillian Tsai:** Promoted to rank of Associate Professor at UTDRO (July 2023)



**Robert Weersink:** Promoted to rank of Associate Professor at UTDRO (July 2023)



**David Shultz:** Promoted to rank of Associate Professor at UTDRO (July 2023)



**Derek Tsang:** Promoted to rank of Associate Professor at UTDRO (July 2023)



**Joanna Javor:** Appointed as Lecturer at UTDRO (June 2023)

## AEP Delivers 9<sup>th</sup> Upper GI SBRT Course

From April 18-20, 2024, RMP's upper gastrointestinal (GI) team delivered the ninth AEP course focusing on stereotactic body radiotherapy (SBRT) for liver, pancreas, and upper GI oligometastases. Learners arrived from all around the world, including Australia, New Zealand, China, Ireland, the US, and Canada, to learn from our faculty.

Course Director **Jelena Lukovic** led Team 2 with support from **Laura Dawson** and guest faculty Dr. Cihan Gani from the University of Tuebingen, Germany. Our experts walked attendees through all key principles of safe and high quality SBRT to the upper abdomen using practical exercises and ample case discussions. The highlight of the course was the debate whereby Laura, **Teodor Stanescu**, and **Alana Pellizzari** challenged Cihan, **Tim Craig**, and **Andrea Shessel** over the proposition: "PRVs should be used in SBRT treatment planning."



My thanks to everyone who gives so much of their time and energy to make these courses such a great success – too many to mention here but you know who you are! I never get tired of being impressed by this great RMP team!

*Nicole Harnett, AEP Director*

## Princess Margaret Cancer Education Program Awards

The Princess Margaret Cancer Education Program announced the 2023 Cancer Education Awards recipients during a ceremony on October 23, 2023. The ceremony was held in the new Cancer Education Centre on the PM 6th floor, and virtually over Zoom. These awards celebrate healthcare staff and trainees who go above and beyond to provide outstanding education, treatment, compassion, advocacy, and care for our patients. Congratulations to all RMP awards recipients.

- Excellence in Mentorship Award: **Jolie Ringash**
- Robert V. Brady Award for Best Resident: **Amir Safavi**
- Best Fellow Award: **Enrique Gutierrez**
- Outstanding Contribution to Cancer Education Award: **Rebecca Wong**
- Excellence in Education Support Award: **Angela Cashell**
- Video Award: **Winnie Li, Michael Velec, Srinivas Raman, Patricia Lindsay, Anthony Demacio**



This summer, I thoroughly enjoyed the learning and practical experience provided by the RMP. It was an amazing opportunity to learn more about cancer treatment and research methodology. This has certainly enhanced my interest in pursuing a career in the healthcare field.

*RMP Summer Student*

## RMP Welcomes Summer Students

RMP welcomed 30 summer students in 2023. Students produced high-quality research and delivered outstanding capstone Research Day presentations. The first in-person RMP Summer Student Research Day since the COVID-19 pandemic took place on August 9, 2023. Students presented their projects to peers and supervisors, including RMP Education Director, **Rebecca Wong**. Students expressed that the program was a tremendous hands-on learning experience with many mentorship and professional development opportunities:

We thank our students, and our interdisciplinary faculty and staff for providing a valuable mentorship and learning experience. Many thanks to RMP Summer Student Program Director Rebecca Wong, Program Coordinator **Jane Tsai**, as well as **Fia Syed** and **Marcia Bowen** for overseeing program administration.

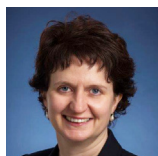
I enjoyed the opportunity to work alongside experts in radiation medicine and learn about the current research being conducted at the RMP and UHN. In addition, I appreciated how the RMP promoted a culture of interdisciplinary collaboration – one where healthcare professionals from several specialties worked together and with their students.

*RMP Summer Student*



2023 RMP Summer Students

## Excellence in Teaching



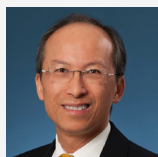
**Barbara-Ann Millar** received the 2022-2023 Colin Woolf Award for Longterm Contributions to Continuing Professional Development (CPD) from the U of T Temerty Faculty of Medicine. This award recognizes faculty who demonstrate commitment to promoting life-long learning and advancing CPD for health professionals through excellence in innovation and collaboration.



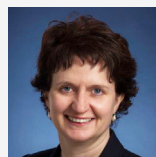
**Fei-Fei Liu** received the 2023 ASTRO Mentorship Award. Fei-Fei is only the third person to receive this prestigious award, which honours mentors in radiation oncology who have demonstrated outstanding commitment to the professional development of their mentees as clinicians, educators, and researchers.



## Radiation Oncology UNIVERSITY OF TORONTO



**Richard Tsang:** Professional Leadership & CME Award, UTDRO (October 2023)



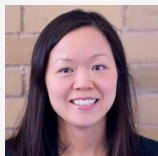
**Barbara-Ann Millar:** Professional Leadership & CME Award, UTDRO (October 2023)



**Cathryne Palmer:** Cummings Educational Leadership Award, UTDRO (October 2023)



**Zabin Mawji:** MRS Program - Excellence in Classroom Teaching, UTDRO (October 2023)



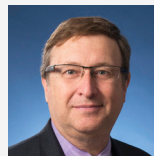
**Kieng Tan:** MRS Program – Excellence in Research Supervision, UTDR0 (October 2023)



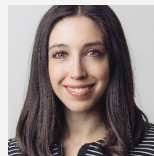
**Anne Koch:** Undergraduate Medical Education – Best Clinical Teaching, UTDR0 (October 2023)



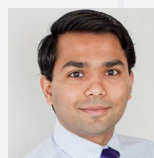
**Rebecca Wong:** Postgraduate Medical Education – Excellence in Research Supervision, UTDR0 (October 2023)



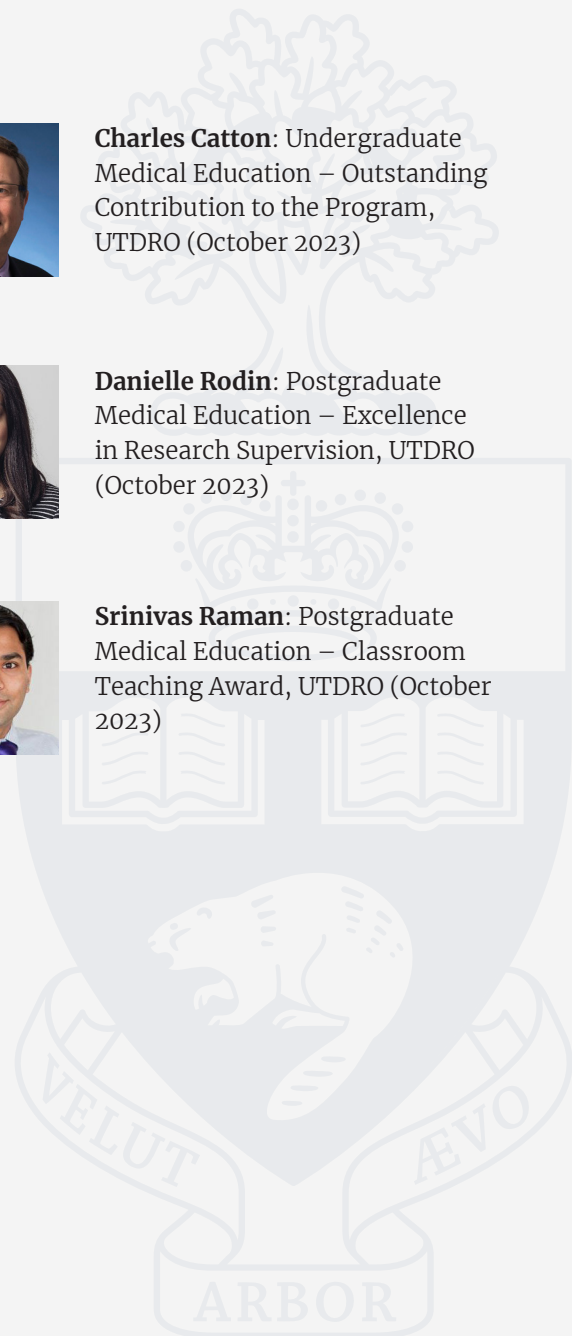
**Charles Catton:** Undergraduate Medical Education – Outstanding Contribution to the Program, UTDR0 (October 2023)



**Danielle Rodin:** Postgraduate Medical Education – Excellence in Research Supervision, UTDR0 (October 2023)



**Srinivas Raman:** Postgraduate Medical Education – Classroom Teaching Award, UTDR0 (October 2023)



RESEARCH



## OUR ACHIEVEMENTS IN 2023-24

# RMP is a world leader in Radiation Medicine research aimed at developing more precise, personalized treatments to cure more patients with fewer side effects

RMP is a world leader in Radiation Medicine research aimed at developing more precise, personalized treatments to cure more patients with fewer side effects.

RMP research activities are strategically aligned with RMP Strategic Roadmap for 2026:

### CURE: PREDICTIVE HEALTH & ADAPTIVE RADIOTHERAPY

RMP is disrupting the radiation treatment landscape through new Adaptive Radiotherapy research and knowledge dissemination to assure the right treatment at the right time for every patient. Research efforts that address this strategic priority include, but are not limited to:

- Developing digital and automation tools to collect predictive metrics
- Enabling imaging/ biology-driven adaptive radiation delivery and on-treatment evaluation of treatment response to reduce toxicity and improve patient outcomes

### COMFORT & CONFIDENCE: TECHNOLOGY-ENABLED PATIENT EXPERIENCE TRANSFORMATION

RMP is committed to providing our patients with the highest quality service, support and care through a seamless, digitally-enabled, personalized experience. Research efforts that address this strategic priority include, but are not limited to:

- Creating systems to capture patient-reported outcomes comprehensively to capture patient needs and preferences
- Creating digital tools and resources to support a personalized experience

### EVOLVE: ADVANCED PARTICLE THERAPY AND THERANOSTICS

RMP will establish an International Centre of Excellence for Advanced Particle Therapy and a Theranostic Centre of Excellence. Research efforts that address this strategic priority include, but are not limited to:

- Designing novel molecular imaging and theranostic agents to be tested in preclinical and clinical trials
- Addressing health equity in accessing particle/proton beam therapy

## CONNECT: SYSTEMS TO MAXIMIZE INNOVATION & WELL-BEING

RMP focuses on reducing inefficiencies, enhancing workflows, and applying appropriate models to streamline care delivery and improve staff and patient experience. Research efforts that address this strategic priority include, but are not limited to:

- Developing AI-driven tools to predict patient volumes and enhance workflow
- Developing automated processes to maximize efficiency and optimize resource allocation

### Novel Discoveries

**\$36M**

Peer-reviewed funding

**153**

Peer-reviewed grants

**316**

Peer-reviewed publications

**288**

Active clinical studies

**119**

Active prospective clinical studies

**10.3%**

New patients accrued to prospective clinical studies

## RMP Research Retreat

The RMP Research Retreat was held at the Kingbridge Centre in King City from April 12-13, 2024. The two-day retreat brought together over 60 attendees from across Radiation Oncology, Medical Physics, and Radiation Therapy to discuss current and emerging research directions in RMP and stimulate intra- and inter-disciplinary collaborations. Many presenters from RMP shared their work, in addition to two keynote speakers: Dr. Anthony Chalmers (Chair of Clinical Oncology, University of Glasgow), and Dr. Keith Furutani (Professor of Medical Physics, Mayo Clinic).

We thank all presenters, the RMP Research Retreat Organizing Committee members (**Mike Milosevic, Jan Seuntjens, Dana Keilty, David Shultz, Leigh Conroy, Catherine Coolens, Jean-Pierre Bissonnette, Winnie Li, Michael Velec, Azusa Maeda**), and **Angela Alivio** for contributing to a successful retreat.



RMP Research Retreat attendees

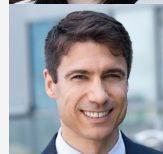
## Notable Publications

### SBRT IMPROVES OUTCOMES IN OLIGOPROGRESSIVE NSCLC



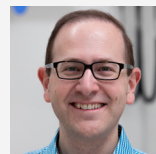
**Jillian Tsai** and colleagues demonstrated in a phase 2 trial published in *Lancet*<sup>i</sup> that SBRT combined with standard care significantly improved progression-free survival in patients with oligoprogressive metastatic NSCLC compared to standard care alone, with PFS extending from 2.2 to 10 months. The findings suggest SBRT as a promising addition to systemic therapy for NSCLC.

### HPV CTDNA PREDICTS RECURRENCE IN CERVICAL CANCER



Published in *J Clin Oncol*<sup>ii</sup>, **Kathy Han** and **Scott Bratman** validated that persistent HPV ctDNA after chemoradiation was independently associated with worse PFS in cervical cancer patients, with detectable ctDNA predicting recurrence as early as the end of the treatment. These findings support the use of HPV ctDNA testing as a tool for early identification of high-risk patients, potentially guiding treatment intensification strategies.

### IMPROVED RISK PREDICTION FOR DCIS RECURRENCE WITH MOLECULAR SCORES



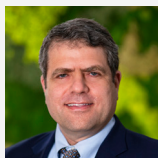
**Ezra Hahn** and colleagues demonstrated that incorporating a 12-gene DCIS Score or a 21-gene Recurrence Score into predictive models significantly improved the accuracy of estimating 10-year local recurrence and invasive recurrence risks in women treated with breast-conserving surgery for DCIS. Published in *J Clin Oncol*<sup>iii</sup>, these assays add valuable information to minimize toxicity, avoid over-treatment, and facilitate individual risk-based decision making.

### OMITTING RADIOTHERAPY AFTER BREAST-CONSERVING SURGERY IN LUMINAL A BREAST CANCER



**Anthony Fyles**, **Fei-Fei Liu**, and colleagues in Toronto and BC demonstrated that women 55 years of age or older with T1N0, grade 1 or 2, luminal A breast cancer had a very low risk of local recurrence at 5 years after breast-conserving surgery when treated with endocrine therapy alone, and are candidates for the omission of radiotherapy. Published in *N Engl J Med*<sup>iv</sup>, this innovative work will help prevent over-treatment of patients with low-risk breast cancer to improve their health outcomes and quality of life.

## ATRX DELETION ENHANCES THERAPY SENSITIVITY IN SARCOMAS



Published in *J Clin Invest*<sup>v</sup>, **David Kirsch** demonstrated that ATRX deletion in soft tissue sarcomas increases sensitivity to radiation therapy and oncolytic herpesvirus (TVEC), associated with persistent DNA damage, telomere dysfunction, and impaired CGAS/STING signaling. These findings highlight ATRX mutations as a potential biomarker for genomically guided therapies to enhance treatment outcomes in patients with ATRX-mutant cancers.

## RADCURE: PUBLIC DATASET FOR HEAD AND NECK CANCER IMAGING RESEARCH



Published in *Med Phys*<sup>vi</sup>, **Tony Tadic** and the **Princess Margaret Head and Neck Site Group** reported the development of RADCURE, a comprehensive imaging dataset for 3,346 head and neck cancer patients offering CT simulation images, organ-at-risk contours, and detailed clinical outcomes data. With standardized nomenclature and accessibility through The Cancer Imaging Archive, this resource supports advancements in radiomics, AI-driven analysis, biomarker discovery, and prognostic modeling in cancer research.

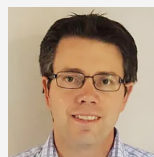
## AI-POWERED CATHETER SEGMENTATION IN MR-GUIDED BRACHYTHERAPY



**Robert Weersink** and colleagues developed a 3D U-Net machine learning algorithm to automate catheter segmentation in MR images for high-dose-rate prostate brachytherapy, achieving a 95% identification rate

with segmentation accuracy comparable to manual observers. Published in *Med Phys*<sup>vii</sup>, the multi-model approach enhanced confidence in segmentation accuracy, flagged poor cases for manual review, and facilitated rapid, accurate treatment planning with minimal impact on dosimetric outcomes.

## APPARENT DIFFUSION COEFFICIENT (ADC) TRACKING PRECISION ON MR-LINAC FOR PROSTATE CANCER



**Jeff Winter** and colleagues evaluated the repeatability and reproducibility of intraprostatic ADC measurements on a 1.5T MR-Linac using deformable image registration to correct for anatomical changes. Published in *Phys Imaging Radiat Oncol*<sup>viii</sup>, the results showed excellent consistency in mean and 10<sup>th</sup> percentile ADC values across clinically relevant regions, supporting the feasibility of precise ADC tracking for biologically driven adaptive radiation therapy.

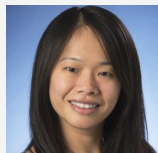
## AUDIOVISUAL DISTRACTION REDUCES INTRAFRACTION MOVEMENT IN PEDIATRIC RADIATION THERAPY



**Tatiana Richie**, **Derek Tsang**, and colleagues evaluated the effectiveness of audiovisual distraction in minimizing intrafraction movement in children undergoing awake RT. Published in *Radiother Oncol*<sup>ix</sup>, the results validated the use of audiovisual distraction as an effective method to avoid anesthesia in pediatric radiation therapy, especially for children under 11 years of age.



## THERAPIST-DRIVEN WORKFLOW FOR PROSTATE MR-LINAC ADAPTIVE RADIOTHERAPY

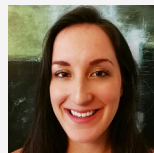


**Winnie Li, Peter Chung,** and colleagues developed and implemented a stepwise training program that enabled radiation therapists to independently manage prostate MR-Linac adaptive radiotherapy. Published in *Tech Innov Patient Support Radiat Oncol*<sup>xi</sup>, results showed that therapists successfully transitioned to independently managing

adaptive treatments with minimal guidance after the training, which consisted of contouring practice, supervised online workflow, and unsupervised therapist-driven workflows with oncologist support.

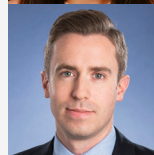


## PATIENT EXPERIENCE WITH MR-LINAC-BASED ADAPTIVE RADIATION THERAPY



**Amanda Moreira, Michael Velec,** and colleagues assessed patient-reported experiences with daily online adaptive radiation therapy using an MR-linac. Published in *Tech Innov Patient Support Radiat Oncol*<sup>xi</sup>, results showed low levels of MR-related anxiety, high satisfaction with care, and positive feedback on radiation therapy

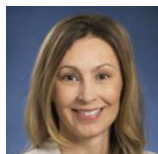
services despite longer treatment times, with some areas for improvement in communication and information provision.



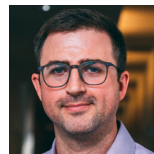
## Excellence in Cancer Research



**Jillian Tsai** was appointed as Medical Director of the Cancer Clinical Research Unit (CCRU) Cancer Registry, effective September 1, 2023, for a three-year term. Jillian brings many years of experience to this role, having worked at cancer registries in California and New York. We thank Jim Brierley who served excellently for many years in the CCRU Cancer Registry.



**Marianne Koritzinsky** was appointed as The Weekend to End Breast Cancer Chair in Breast Cancer Research at the Princess Margaret Cancer Centre, effective January 1, 2024.



**Shane Harding** was appointed as Chair of the Cancer Biology and Imaging (CBI) Program, effective February 1, 2024. The CBI Program is the largest division of the PM Research Institute and focuses on themes of cell, molecular and mechanistic biology of cancer, molecular pathology, and personalized molecular cancer imaging to enable transformational discoveries in fundamental cancer biology while striving for rapid implementation of new treatment paradigms.

## Notable Peer-Reviewed Funding

**James Chow:** Building a RT-ChatGPT on radiotherapy for cancer treatment using a medically trained OpenAI ChatGPT. CIHR Project Grant.

**Jennifer Croke:** A distress assessment and response program for oncology family caregivers – a caregiver researcher dissemination and planning partnership. CIHR Planning and Dissemination Grants.

**Meredith Giuliani:** Impact of a sexual health rehabilitation educational video series on prostate cancer survivor knowledge, attitudes, and practices. AbbVie –CARO Uro-Oncologic Radiation Awards (ACURA).

**David Hodgson, Derek Tsang:** From computer to clinic: deploying artificial intelligence-assisted radiotherapy planning for brain tumours. Brain Tumour Foundation of Canada.

**Marianne Koritzinsky:** Synergistic radiosensitization of hypoxic pancreatic adenocarcinoma using Gd-Texaphyrin oxygen-loaded nanodroplets. CIHR Project Grant.

**Winnie Li:** A Pan-Canadian assessment of image guided adaptive radiation therapy: role of the radiation therapist and recommendations for advanced practice roles. Canadian Association of Medical Radiation Technologists.

**Benjamin Lok:** A preclinical basket study of immunogenic enhancers with interrogation of myeloid-mediated immunosuppression in recalcitrant neuroendocrine tumors and carcinomas. Terry Fox Research Institute (TFRI) New Frontiers Program Project Grant.

**Alexandra Rink:** Solid state polymerization of diacetylene crystals for ionizing radiation dosimetry. NSERC Discovery Grant.

**Danielle Rodin:** Accounting for equity and economic burden in priority setting for breast cancer control in India. CIHR Project Grant.

**Monica Serban:** Tools and algorithms for accurate longitudinal dose assessment in multi-modal cancer radiation therapy. NSERC Discovery Grant.

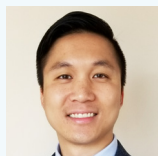
**David Shultz:** Factors associated with quality of life and neurocognitive function and in patients with brain metastases: analyses of a prospective longitudinal study. Brain Tumour Foundation of Canada.

**Derek Tsang:** DOTATATE PET imaging for intracranial and spinal meningioma to guide precision surgery and radiation therapy. University of Toronto JDMI Academic Incentive Fund.

**Michael Yan:** Prospective registry trial COMparing Stereotactic Body Radiotherapy (SBRT) to Conventional Palliative RadioTherapy (cEBRT) in patients with spinal metastases (COMBAT). MSH-UHN AMO Innovation.

*Only RMP PIs/Co-PIs listed*

## Notable Awards and Distinctions



**Benjamin Lok:** Ontario Research Fund Early Career Investigator Award (March 2024)



**Kathy Han:** American Society of Radiation Oncology (ASTRO) Press Program (October 2023)



**Monica Serban:** Canadian Association of Radiation Oncology (CARO) #1 Abstract Award (September 2023)



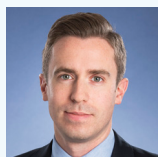
**Robert Weersink:** Canadian Organization of Medical Physicists (COMP) #2 Poster Presentation (September 2023)



**Derek Tsang:** University of Toronto Department of Radiation Oncology (UTDRO) Best Annual Research Performance Award (October 2023)



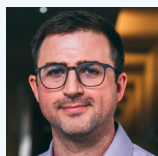
**Sophie Huang:** University of Toronto Department of Radiation Oncology (UTDRO) Excellence in Research Award (October 2023)



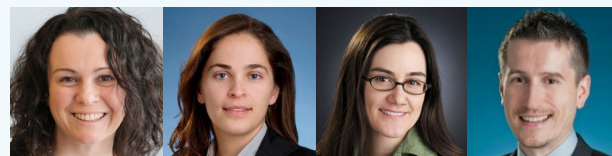
**Michael Velec:** Promoted to Full Member of the Canadian Institutes of Health Research (CIHR) College of Reviewers (October 2023)



**Jillian Tsai:** 2023 Princess Margaret Till and McCulloch Paper of the Year – Clinical Award (April 2024)



**Shane Harding:** Princess Margaret Mona Gauthier Award (May 2023); Canadian Institutes of Health Research (CIHR) Early Career Award in Cancer (January 2024); 2023 Princess Margaret Till and McCulloch Paper of the Year – Discovery Research Award (May 2024)



**Alexandra Rink, Catherine Coolens, Patricia Lindsay, Teodor Stanescu:** Promoted to Physicist III (Senior Medical Physicist; February 2024)

# TEAM RMP



## OUR ACHIEVEMENTS IN 2023-24

# RMP's richest resource is its people – with a team of over 400 radiation medicine professionals, RMP is able to deliver on its vision of achieving Precision Radiation Medicine

With a team of over 400 radiation medicine professionals, the Radiation Medicine Program is fortunate to have a diverse pool of talent to increase RMP's capacity to deliver on our vision of achieving Precision Radiation Medicine. Personalized Care. Global Impact. In 2023, RMP continued to exhibit excellence, innovation, and leadership in patient-centered care, research, and education, exemplified by the high level of productivity and achievements of our staff.

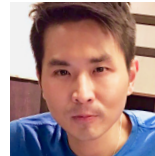
## Staff Spotlights



**Meredith Giuliani** was named a Fellow of the American Society of Clinical Oncology (ASCO). This title recognizes ASCO members who demonstrate outstanding service to the society, the field of oncology, and patients. Meredith will be inducted at the 2024 ASCO Annual Meeting Opening Session taking place June 1, 2024 at the McCormick Place Convention Center in Chicago, Illinois.



**Angela Cashell** was awarded the Fellowship of the Canadian Association of Medical Radiation Technologists (CAMRT). Angela joins **Michael Velec** and **Tara Rosewall** who are also Fellows of CAMRT.



**Yat Tsang** was awarded the 2023 Hong Kong Polytechnic University Department of Health Technology & Informatics Outstanding Alumni Award in Professional Achievement.



**Padraig Warde** was appointed to the 2022 Order of Ontario, the province's highest honour. The Order of Ontario recognizes exceptional leaders from diverse fields whose impact and lasting legacy has played an important role in building a stronger province, country, and world. The incoming Lieutenant Governor, Edith Dumont, bestowed the honour on Padraig during the official ceremony on November 27, 2023.





**Jan Seuntjens** was inducted to the 2024 Class of the American Institute for Medical and Biological Engineering (AIMBE) College of Fellows. Election to the AIMBE College of Fellows is among the highest professional distinctions accorded to medical and biological engineers, bestowed on the top two percent of engineers in these fields who have made outstanding contributions to engineering and medicine research, practice, or education. Jan was elected for his seminal contributions to the science and education of radiation physics and radiation medicine dosimetry.



**Marcia Bowen** was appointed as Business Administration Manager (DRO), effective December 25, 2023. Marcia joined PM in 2000, and has held many critical leadership positions throughout the years including her most recent role as DRO Administrative Services Supervisor. Marcia will continue to oversee the DRO Administrative Services portfolio, DRO Fellowship and Education, and human resources for our medical faculty and administrative staff. She will continue to report to Catarina Lam, RMP Senior Manager.



**Andrew Currell** was promoted to Supervisor Electronics Lab, Medical Physics, effective December 18, 2023. In this role, Andrew will lead the RMP Accelerator Services team, succeeding George Parsons who retired.

## New Talent

### RADIATION ONCOLOGY

Jennifer Kwan  
Nauman Malik  
Dana Keilty

### MEDICAL PHYSICS

Raanan Marants  
Iymad Mansour  
Sarah Aubert

### RADIATION THERAPY

Adela Yeung	Ravina Gautam
Kayli Chen	John Milne
Alan Wong	Hillary Chan
Melanie Tse	

### ADMINISTRATION/RESEARCH/OPERATIONS

K'shania Frimpong	Khatija Desai
Azusa Maeda	Jennifer Permaul
Odette Melvin	Saynab Ali
Charmaine Baniaga	Namrata Sharma
Maria Igot	Kathleenkay Tizon
Amina Warsame	Savina Primi

### CLINICAL RESEARCH PROGRAM

Khushbu Ninawat  
Mitali Shah  
Randa Higazy

*Permanent new staff hires listed*

## First-Ever RMP Retreat

The inaugural RMP Retreat focusing on Innovation & New Technology took place on November 17, 2023 in the MaRS Centre Discovery District Collaboration Room. It was well attended by many members of RMP, who contributed insightful discussions.

Special thank you to speakers **Winnie Li**, **Nauman Malik**, **Leigh Conroy**, **Dana Keilty**, **Jan Seuntjens**, McKenzie Lloyd-Smith (MindPort Inc.), and **Mike Milosevic** who delivered talks on innovative new technologies including brachytherapy, artificial intelligence (AI), HyperSight imaging, and image-guided radiation therapy (IGRT).



RMP staff at the inaugural RMP Retreat

## Celebrating Team RMP

On November 27, 2023, RMP held its annual awards ceremony. We opened the 7<sup>th</sup> floor HIVE once again to all RMP who wished to attend, and had over 120 more participants tune in via livestream to celebrate the outstanding dedication and contributions of Team RMP.

### RMP EDUCATION AWARDS

- Distinction in Professional Mentorship Award: **Andrea Bezjak**
- Distinction in Teaching Award: **Joanna Javor**
- Trainee Excellence in Education Award: **Donna Liao; Kayli Chen**
- Excellence in Education Support Award: **Jane Tsai**
- Best RMP Rounds: **Derek Tsang**
- Head's Choice RMP Rounds: **Rachel Glicksman**
- AEP Highest Overall Teaching Effectiveness Score Award: **Jennifer Dang**
- AEP "Putting Innovation to Work" Builder Award: **Nicole Harnett**

### RMP RESEARCH AWARDS

- Paper of the Year – Radiation Oncology: **David Hodgson**  
*Risk of COVID-19 Infections and of Severe Complications Among Survivors of Childhood, Adolescent,*

*and Young Adult Cancer: A Population-Based Study in Ontario, Canada. J Clin Oncol. 2022 Apr 20;40(12):1281-1290.*

- Paper of the Year – Medical Physics: **Teodor Stanescu**  
*MRI-Guided Online Adaptive Stereotactic Body Radiation Therapy of Liver and Pancreas Tumors on an MR-Linac System. Cancers (Basel). 2022 Jan 30;14(3):716.*
- Paper of the Year – Radiation Therapy: **Joanna Javor**  
*Eliminating tattoos for short course palliative radiation therapy: Set-up error, satisfaction and cost. J Med Imaging Radiat Sci. 2022 Jun;53(2 Suppl):S56-S62.*
- Paper of the Year – Collaborative: **Rebecca Wong, Andrea Bezjak, Jim Brierley, Laura Dawson, Meredith Giuliani, John Kim, Jolie Ringash, Alexander Sun, Peter Chung, Andrew Hope, Andrea Shessel, Patricia Lindsay**  
*Patient-Reported and Clinical Outcomes From 5-Fraction SBRT for Oligometastases: A Prospective Single-Institution Study. Int J Radiat Oncol Biol Phys. 2022 Dec 1;114(5):1000-1010.*
- Exceptional Research Support: QIPCM Team (**Brandon Driscoll, Tina Shek, Jenny Lee, Michael Andersen, Shailaja Sajja, Alexandra Gergolas, Julia Publicover**); **Edel Sexton; Neel Choudhary**
- Research Leadership Award: **Jean-Pierre Bissonnette**

## RMP CLINICAL AWARDS

- Exceptional Program Service Award: **Lyndon Morley; Marcia Bowen**
- Distinction in Quality & Process Improvement Award: **Michelle Lara**; Transportation Safety Events Quality Improvement Team (**Karen Tse, Zaynab Muraj, Lyndon Morley**)
- Distinction in Technical Improvement Award: **Karen Tse**
- Excellence in Patient Experience Award: **Amir Safavi**



# Honouring a Lifetime of Achievement at RMP

In 2023-24, RMP celebrated the well-deserved retirements of Radiation Oncologist **Richard Tsang** (July 2023), Clinical Specialist Radiation Therapist **Biu Chan** (July 2023), Radiation Oncologist **Anthony Fyles** (August 2023), Radiation Oncologist **Normand Laperriere** (May 2024), Medical Physicist **Fred Cheung** (February 2024), and Radiation Therapists **Fred Cops**, **Steve Pizzale**, **Dan Sajac**, **Mary Stewart** (November 2023), **Tony Lam** (January 2024), and **Jerry Roussos** (March 2024); pictured from top-left to bottom-right below.

RMP thanks all for their decades of outstanding dedicated service which enabled us to deliver compassionate care, conduct innovative research, and accelerate education and mentorship at the Princess Margaret.



## Sustained Service

Congratulations and thank you to our dedicated RMP members who have reached their  $\geq 25$  year service milestone in 2023.

### 25 YEARS

Michael Holwell

### 30 YEARS

John Waldron  
Nancy LaMacchia  
Ivan Yeung

### 35 YEARS

Angela Cashell  
Charles Catton



## Fostering Community Spirit

After many months of pandemic-related closures, RMP was pleased to reconvene for a number of social and community building events in 2023-2024.

On September 7, 2023, Team RMP came together for a social event at Spin Toronto. We enjoyed ping pong, food, and valued time with colleagues and friends. We applaud the bold, competitive spirit of those who signed up for the ping pong tournament. The event was a success, and we acknowledge all Team RMP who attended. Many thanks to **Winnie Li, Angela Cashell, Anthony Lausch, Jeff Winter, Kayli Chen, Kelly Guo, Letizia Cheung, Revadhi Chelvarajah, Sophia Ly, Vanessa Wan, and David Kirsch**, for organizing and leading the event.

On March 2, 2024, Team RMP gathered for a day of curling at the Leaside Curling Club. There was sweeping, sliding, smiles, and sore muscles. Although we had a range of experience, from novice to expert, together we demonstrated that the RMP community spirit is alive and strong.



# ACKNOWLEDGEMENTS

## Annual Report Contributors

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RMP Quality Committee  
RMP Research Committee  
RMP Education Committee  
RMP Operations Committee  
RMP Steering Committee

## Photo Credits

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RMP/RAD Team archives  
UHN Foundation

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- i. 10.1016/S0140-6736(23)01857-3
- ii. 10.1200/JCO.23.00954
- iii. 10.1200/JCO.23.02276
- iv. 10.1056/NEJMoa2302344
- v. 10.1172/JCI149310
- vi. 10.1002/mp.16972
- vii. 10.1002/mp.17117
- viii. 10.1016/j.phro.2024.100570
- ix. 10.1016/j.radonc.2024.110120
- x. 10.1016/j.tipsro.2023.100212
- xi. 10.1016/j.tipsro.2024.100240

**Read the annual report online at [www.radiationatpm.com](http://www.radiationatpm.com)**



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