![UHN Princess Margaret Cancer Centre logo]
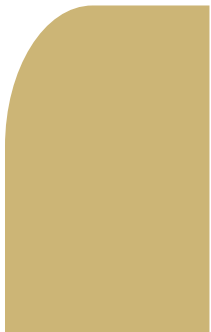
RADIATION MEDICINE
PROGRAM

ANNUAL REPORT
2022-2023

VALUES

Innovation
Excellence
Collaboration
Accountability
Integrity

MISSION

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

VISION

Precision Radiation Medicine.
Personalized Care.
Global Impact.

CURE
Predictive Health & Adaptive Radiotherapy

EVOLVE
Advanced Particle Therapy & Theranostics

COMFORT & CONFIDENCE
Technology-enabled Patient Experience Transformation

CONNECT
Systems to Maximize Innovation & Wellbeing

CONTENTS

A MESSAGE FROM
THE HEAD

I am so honoured to join the Princess Margaret Cancer Centre as the Head of the Radiation Medicine Program (RMP) and Head of Radiation Oncology at University Health Network. I would like to thank Team RMP for the warm welcome I have received, especially from my predecessors **Fei-Fei Liu**, immediate past Chief, and **Richard Tsang**, past interim Head, whose successful leadership is reflected in the many accomplishments in this annual report. I would also like to thank other leaders of RMP including **Yat Tsang**, Director of Radiation Therapy, **Jan Seuntjens**, Head of Medical Physics, and **Colleen Dickie**, Director of Operations, with whom I am fortunate to work to lead our dynamic multidisciplinary team of radiation oncologists, medical physicists, radiation therapists, nursing, allied health, administrative, and support staff. This annual report gives us an opportunity to celebrate the successes of RMP across our missions of clinical care, research, and education. In 2021, RMP launched a strategic refresh plan, ***Strategic Roadmap to 2026: Revolutionizing Radiation Care Through Digital Health***. This annual report also gives us the opportunity to reflect on how we are advancing our vision from the Strategic Roadmap of "Precision Radiation Medicine. Personalized Care. Global Impact."

RMP remains one of the largest single-site radiation medicine programs in the world, providing 8,769 patient consultations and 6,892 protocol instances delivered in fiscal year 2022-2023. It is a privilege to work with an extraordinary multi-disciplinary team with state-of-the-art technology to care for these cancer patients. We also have the remarkable opportunity to accelerate radiation medicine globally as outlined in our Strategic Roadmap by advancing adaptive radiotherapy, transforming the patient journey through digital technology, and building comprehensive programs in particle therapy and theranostics. Over the past year, Team RMP continued to focus on these strategic initiatives.

RMP conducts innovative response-driven adaptive radiotherapy research to promote personalized and precision-based treatment. In 2022-2023, our multidisciplinary teams led by RMP investigators enjoyed a highly successful CIHR funding application season, capturing competitive grants to explore chemoradiotherapy with or without surgery for the management of esophageal cancer (PI **Jelena Lukovic**), development of proton therapy accelerators (PIs **Jan Seuntjens** and **David Hodgson**), and use of artificial intelligence in the clinic for cervical cancer brachytherapy (PI **Alexandra Rink**) and external beam radiotherapy planning (multi-PI team including **Thomas Purdie**, **Alejandro Berlin**, **Chris McIntosh**, **Leigh Conroy**, **Kathy Han**, **Ali Hosni**, **Andrea McNiven**, and **Jeff Winter**). Our research teams also held a successful retreat to explore research opportunities in RMP to advance radiation science.

Furthermore, several staff received prestigious awards and appointments, including Richard Tsang, who was inducted as an ASTRO Fellow, David Hodgson, who received the CARO Gold Medal, Fei-Fei Liu, who was appointed Scientific Director of the CIHR Institute of Cancer Research, **Catherine Coolens** and Thomas Purdie, who were inducted as AAPM Fellows, and the late **Douglass Vines**, who received the OAMRS Practitioner of the Year Award posthumously.

RMP's innovative education programs continue to deliver exceptional teaching to students across the full professional spectrum and trainees from around the world. In 2022-2023, the Accelerated Education Program (AEP) successfully completed its first in-person course since the beginning of the COVID-19 pandemic. We opened our doors once more to international observers and were proud to host a number of talented colleagues and trainees. This year, the University of Toronto Medical Biophysics Program also launched the CAMPEP-accredited Medical Physics PhD Specialization stream. In training such a diverse group of radiation medicine professionals, we are achieving our goal of global impact, maximizing cancer outcomes for not just our own patients, but for those around the world.

In summary, I am delighted to share so many amazing accomplishments from Team RMP in 2022-2023. These accomplishments are even more remarkable in light of the unprecedented challenges due to COVID-19, and I thank you for your perseverance and resilience that propelled RMP to such a successful year. I am humbled by the opportunity to work with such a diverse and talented team in RMP to excel across all our missions: to provide outstanding care to patients, teach the next generation, and make discoveries that advance the field and improve outcomes for all cancer patients. I look forward to all that we will achieve together in the coming years.

David Kirsch, MD, PhD, FASTRO, FAAAS
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 370 staff work collectively to deliver high quality radiation treatment to over 8,000 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 250 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 Observership and Accelerated Education Program (AEP).

2022
THE YEAR IN NUMBERS

6,892
Protocol instances delivered*

8,769
Patient consultations*

4,745
Patient visits to Radiation Nursing Clinic*

Fiscal year statistics

23
Radiation oncology residents

31
Radiation oncology fellows

5
Medical physics residents

27
Medical radiation sciences students

24
Observers from 7 countries

$42M
Peer-reviewed funding

259
Peer-reviewed publications

313
Active clinical studies

10.2%
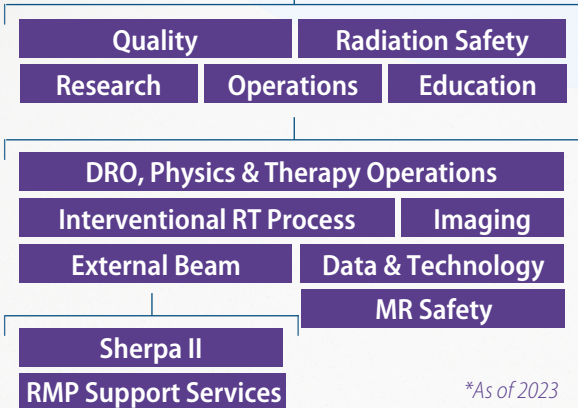New patients accrued to prospective clinical studies

TEAM RMP

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.

23 Clinical Research Program Staff

2 Nurse Practitioners

Radiation Therapists
- **6** Clinical Specialist Radiation Therapists
- **1** Radiation Therapy Clinician Scientist

Nurses
- **4** Nurses in Radiation Nursing Clinic (RNC)
- **>16** Nurses in Review Clinic

>20

196

>75 Support Staff

>50

37

Radiation Oncologists
- **8** Ontario Association of Radiation Oncologists (OARO) Clinician-Scientists
- **4** Princess Margaret Cancer Centre Research Scientists

Medical Physics
- **29** Medical Physicists
- **5** Accelerator Services Engineers
- **8** Physics Associates
- **4** Machine Shop Engineering Technicians
- **8** Clinician Scientists
- **2** Senior Scientists

3 Physician Assistants

Steering

Quality	Radiation Safety

Research	Operations	Education

DRO, Physics & Therapy Operations

Interventional RT Process	Imaging

External Beam	Data & Technology

MR Safety

Sherpa II

RMP Support Services

*As of 2023

STATE OF THE ART FACILITY

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

A YEAR IN REVIEW
STRATEGIC ROADMAP TO **2026**

Since the launch of the **Strategic Roadmap to 2026** in 2021, RMP has focused on implementing several key initiatives and activities in Year 2 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 PM Cancer Program; the Princess Margaret Cancer Foundation, and all of Team RMP in helping us to achieve our strategic goals. Key highlights from 2022-2023 are shown.

CURE

Empower predictive health and accelerate response-driven adaptive radiotherapy

- Migrated prostate machine learning (ML) planning to clinical platform; the first case was completed in June 2022.
- Migrated all external beam team planning to EVOQ, an automated web-based quality assurance system for radiotherapy treatment plan review, by mid-2022.
- Completed an Epic template for outcome capturing for head and neck cancer.
- Finalized Epic outpatient note template modules for all site groups; this will help build a curative-intent anthology of outcomes.
- Increased patient treatment accrual on the MR-Linac.

EVOLVE

Establish centres of excellence in advanced particle therapy and theranostics

- Submitted Stage 1.2 Proposal to the Ministry of Health for the development of Canada's first hospital-based particle therapy centre in downtown Toronto.
- Created a stakeholder engagement plan and integrated a deployment strategy to attract resources, funding, and partners for the particle therapy centre. Stage 1.3 Functional Program, including functional programming and room by room equipment allocation, is almost complete and will be submitted to the Ministry of Health by the end of summer 2023.
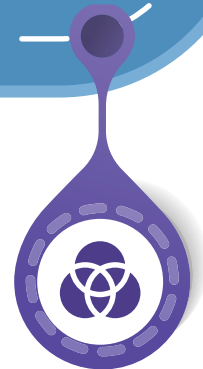
CONNECT

Elevate systems to maximize innovation and wellbeing

- Developed the algorithm for an artificial intelligence (AI)-driven patient scheduling system to maximize efficiency and optimize resource allocation within RMP.
- Commenced clinical testing of the AI-driven patient scheduling system and training of patient flow coordinators on the system.
- Took steps to optimize the Radiation Treatment Quality Based Procedures (QBP) data extraction and activity reporting process using robust systems approaches and automation.
- Identified data elements, baseline model, and model parameters necessary to developing a machine learning algorithm to automate protocol assignment based on historic QBP submission.
- Developed an automated script for the power BI dashboard, which will generate counts for completed protocol instances.
- Implemented Ocean eReferral Network, a platform for electronic referrals, in RMP.

COMFORT & CONFIDENCE

Enhance personalized, equitable, compassionate care through a technology-enabled patient experience transformation

- Appointed a working group with a patient partner to perform a status evaluation of the Case Expert Radiation Therapy (CERT) model, determine next steps from an operational perspective, and optimize the model across the program.
- Translated five key radiation therapy education pamphlets in five common languages for patients. Pamphlets have been made available in the PM Digital Education Prescription (DEP) site.
- Completed the clinical implementation of disseminating an education pamphlet on sexual health for patients with head and neck cancer receiving radiation therapy.

CLINICAL CARE

Our clinical practice encompasses all aspects of cancer care – from diagnosis to survivorship. In 2022-2023, RMP provided 8,769 patient consultations and delivered 6,892 protocol instances. As well, there were 4,745 visits to the Radiation Nursing Clinic (RNC) for symptom and side effect management.

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 TEAMS

Superteams	Tumour Site Groups
Team 1	Endocrine, eye, head & neck, skin
Team 2	Breast, lung, upper gastrointestinal (GI)
Team 3	Genitourinary (GU), gynecological (GYN), lower GI
Team 4	Central nervous system (CNS), leukemia, lymphoma, palliative, pediatrics, sarcoma

SPECIALIZED PROGRAMS

Brachytherapy

Gamma Knife Radiosurgery

Palliative Radiotherapy and Oligo-metastasis

Pediatric Radiation Therapy

Stereotactic Radiation Therapy

RMP WELCOMES NEW DEPARTMENT HEAD

David Kirsch was appointed Head of the Radiation Medicine Program and Head of the Department of Radiation Oncology at the Princess Margaret Cancer Centre, effective May 1, 2023. He was also appointed Senior Scientist at PM-UHN and the Peter and Shelagh Godsoe Chair in Radiation Medicine. David is an internationally renowned radiation oncologist, clinician-scientist, and past Barbara Levine University Distinguished Professor at Duke University with expertise in bone and soft tissue sarcomas. He was formerly co-leader of the Radiation Oncology and Imaging Program at Duke Cancer Institute, with an award-winning research program spanning discovery science, translational research, and clinical trials. David succeeded **Richard Tsang**, who led RMP with exceptional skill as the interim Head of RMP since September 2022 after **Fei-Fei Liu** stepped down.

PROP: RENEWED AND REFRESHED

In January 2023, the Palliative Radiation Oncology Program (PROP) at the Princess Margaret was re-launched as the Palliative Radiotherapy and Oligometastasis Program. **Jillian Tsai** was recruited from Memorial Sloan Kettering Cancer Center in New York and appointed as Radiation Site Group Lead. In addition to offering rapid access to palliative radiotherapy, PROP will comprehensively evaluate patients for locally ablative metastasis-directed radiotherapy to treat oligometastasis, limited sites of metastatic cancer. Metastasis-directed ablative radiotherapy can eradicate individual metastatic lesions in the bone, liver, lung, and brain. Compelling data suggests that this approach may delay disease progression and improve patient survival.

Moving forward, the PROP team at the Princess Margaret will focus on three key themes to advance care in patients with metastatic cancer: (1) Redefine the role of radiation therapy in patients with metastatic cancer through innovative technology, personalized treatment, and multi-disciplinary collaboration; (2) Improve symptom control and patient-centred care; and (3) Use radiotherapy to prevent future cancer-related symptoms.


Palliative Radiotherapy and Oligometastasis Program (PROP) Team   Jillian Tsai

LAUNCH OF THE PRINCESS MARGARET CANCER CARE NETWORK

The Princess Margaret (PM) Cancer Care Network was launched in 2022 to expand the reach of the Princess Margaret through partnerships with Ontario healthcare centres. The network aims to improve access to advanced technologies, clinical advice, education, and innovations with the goal of improving cancer care for all Ontario patients. On June 9, 2022, the Stronach Regional Cancer Centre at Southlake Regional Health Centre became the first member to join the PM Cancer Care Network, followed by The Grand River Regional Cancer Program in April 2023. These partnerships aim to enhance access to cancer services, clinical trials, and cancer research for the residents of York Region, North York, South Simcoe County, and Waterloo Wellington. As stated by **Andrea Bezjak**, Medical Director of the PM Cancer Care Network, *"The Princess Margaret Cancer Care Network seeks to level the playing field, ensuring patients have equitable opportunities to access the advanced care and knowledge available at a world-leading facility, regardless of where they live."*

BUILDING AN AI-POWERED PATIENT SCHEDULING PLATFORM

Srinivas Raman
Philip Wong
Anita Vloet
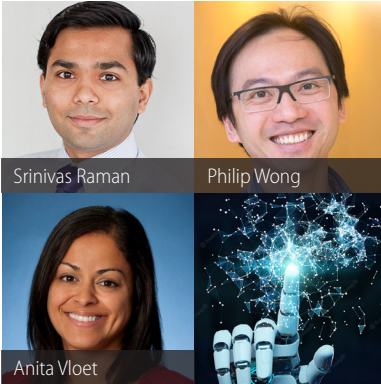
In 2022, RMP's Advanced Analytics and Automation (AAA) Team, led by **Srinivas Raman**, **Philip Wong**, and **Anita Vloet**, entered the implementation phase for their automated radiation therapy (RT) scheduling and prioritization platform project. Funded by the Ontario Bioscience Innovation Organization and Gray Oncology Solutions Inc. (GrayOS), the team integrated their scheduling algorithm with the GrayOS scheduling software. Clinical deployment and training of patient flow coordinators on the system began in 2023.

The AI-powered RT platform is designed to automate patient scheduling of treatment appointments to streamline efficiency, improve patient convenience, and minimize treatment delays through algorithm-based prioritization of patients undergoing RT. The project supports the objectives of RMP's ***Strategic Roadmap to 2026*** and marks one of the world's first applications of data-driven scheduling, solidifying RMP's leadership in the global adoption of intelligent digital health solutions.

UHN LOCAL IMPACT AWARDS

The winners of the 2022 UHN Local Impact Awards were announced during UHN's Virtual Holiday Forum on December 13, 2022. The Local Impact Awards recognize outstanding individuals and teams who advance UHN's strategic pillars. Congratulations to all RMP award recipients.

Tomorrow's Care Award
This award recognizes individuals and teams who have developed partnerships with patients, communities, and industry to advance new models of compassionate care.
Team: **Clinical Specialist Radiation Therapist/Advanced Practice Radiation Therapist (CSRT/APRT) Team: Biu Chan, Kitty Chan, Joanna Javor, Vickie Kong, Grace Lee, Andrea Shessel**

TeamUHN Award
This award recognizes individuals and teams who help build a diverse, healthy, and aligned culture in UHN.
Team: Princess Margaret Sexual & Gender Diversity Cancer Working Group: **Jennifer Croke**

President's Award, Patient Partner
This new award recognizes a Patient Partner who has made a significant impact on UHN by creating partnerships, taking an invested approach, moving beyond their own experiences, communicating openly, and making influential contributions to UHN.
Individual: **Danelle Smith** (Co-Chair, UHN Proton Therapy Patient Partner Consultation Group; RMP Quality Committee; DRO Search Committees; Cancer in the Arts Committee)
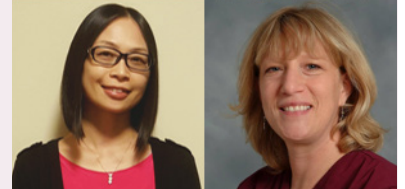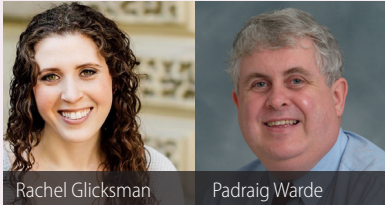

From left to right, top: Biu Chan, Kitty Chan, Joanna Javor, Vickie Kong, Grace Lee, Andrea Shessel
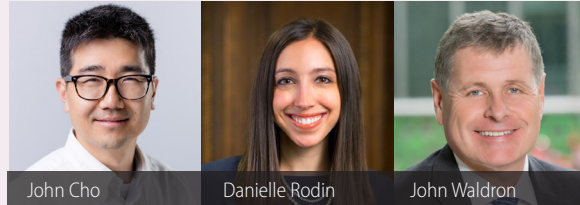

Jennifer Croke
Danelle Smith

EXCELLENCE IN PATIENT CARE

Rachel Glicksman   Padraig Warde

Rachel Glicksman and **Padraig Warde** made Post City's T.O.'s Top Doctors List in March 2023, which honours outstanding Toronto physicians who have been selected by their peers.


John Cho   Danielle Rodin   John Waldron

John Cho, **Danielle Rodin**, and **John Waldron** were named honourees of the UHN Foundation's Honour Your Hero Program for the November 2022 – April 2023 period. Honour Your Hero enables patients, families, and caregivers to express their gratitude to UHN hospital staff who demonstrate compassionate patient care.

Douglass Vines received the 2023 Ontario Association of Medical Radiation Sciences (OAMRS) Practitioner of the Year Award posthumously. OAMRS Awards recognize MRTs who have delivered exceptional healthcare and made an impact through leadership, teamwork, and patient care.
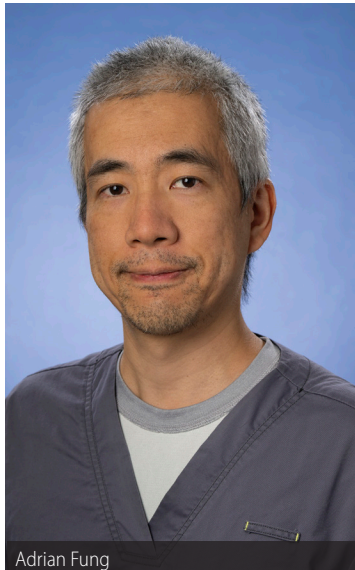

Adrian Fung

## CELEBRATING COMPASSIONATE PATIENT CARE

2022 marked the 23rd Gerald Kirsh Humanitarian Awards Ceremony. The Kirsh family initiated these awards over 20 years ago in honour of their father and husband, Gerald Kirsh, a former patient at the Princess Margaret. The awards recognize PM staff and volunteers who go above and beyond to provide exceptional humanitarian care for patients and support for their families. Congratulations to this year's award recipients: RMP's Radiation Therapist **Adrian Fung** and Nurse Practitioner Suzanne Rowland. Congratulations as well to RMP nominees **Andrea Bezjak**, **Bernadeth Lao**, and **Ellen Hoffman**. Previous RMP winners include **Jennifer Croke** (2020), **David Shultz** (2019), **Alejandro Berlin** (2017), **Sandra Scott** (2015), and **Wilfred Levin** (2008).


Andrea Bezjak
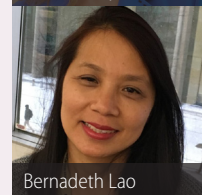
Bernadeth Lao
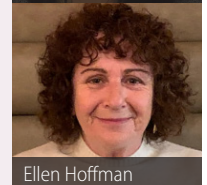
Ellen Hoffman

# RMP WELCOMES NEW DIRECTOR OF RADIATION THERAPY

Yat Tsang was appointed Director of Radiation Therapy in the Radiation Medicine Program, effective September 26, 2022. Yat is an internationally recognized and award-winning Radiation Therapist. He was formerly appointed as a Consultant Radiographer at the Mount Vernon Cancer Center in the UK, Associate Professor at London Southbank University, and member of the European Society for Radiotherapy and Oncology (ESTRO) Radiation Therapy Committee, where he has since been appointed Chair. In this role, Yat will lead RMP's world-renowned Department of Radiation Therapy to drive the delivery of compassionate clinical care, research and innovation, as well as education and training for the next generation of radiation therapists. Yat succeeds **Christine Hill**, who served ably as the Interim Director of Radiation Therapy since August 2020, following Elen Moyo's retirement.
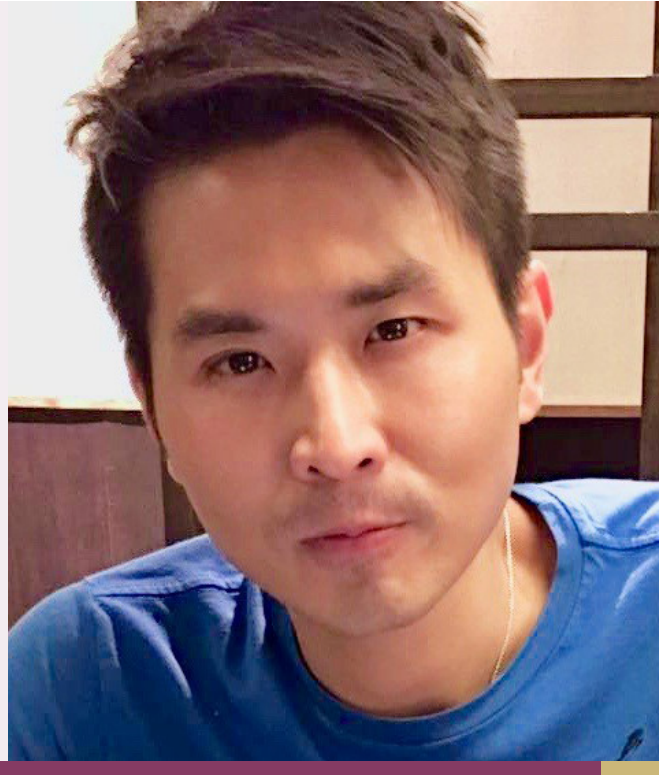
LEADERSHIP APPOINTMENTS

Yat Tsang was appointed as a member of the Princess Margaret Global Cancer Program Advisory Committee, effective March 2023.
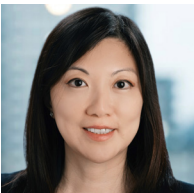
Jillian Tsai was appointed as Palliative Radiotherapy and Oligometastasis Program (PROP) Site Group Leader, effective January 2023, succeeding Barbara-Ann Millar, who served as Interim Site Group Leader since July 2022 following Aisling Barry's departure.

Jelena Lukovic was appointed as Endocrine Site Group Leader, effective November 2022, succeeding Jim Brierley, who held this role since 2002.

Danielle Rodin was re-appointed to the Union for International Cancer Control (UICC) Board of Directors for a second two-year term, effective October 2022.

Richard Tsang was appointed as Interim Head, Radiation Medicine Program, effective September 2022 through April 2023.

LEADERSHIP APPOINTMENTS (CONTINUED)

Katherine Del-Poso Lee: Nurse Practitioner within PROP (May 2023)

Lorella Divanbeigi: Radiation Therapy Team Supervisor (November 2022); Radiation Therapy Strategic Operations Acting Manager (November 2022)

Benoît Guibord: Radiation Therapy Team 4 Reference Planner (November 2022)

Christine Hill: Radiation Therapy Strategic Operations Manager (November 2022)

Tony Lam: Radiation Therapy Team 3 Reference Planner (November 2022)

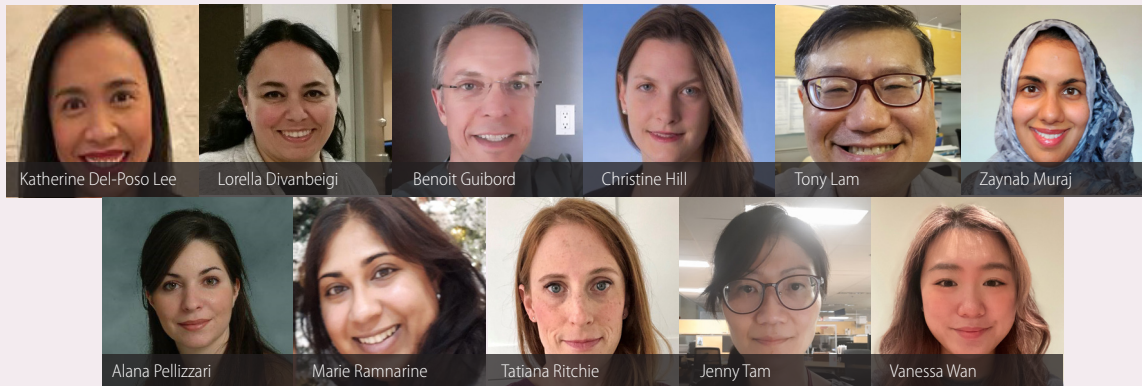**Zaynab Muraj:** Radiation Therapy Gynecologic EBRT Site Leader (March 2023)

Alana Pellizzari: Radiation Therapy Palliative Site Leader (March 2023)

Marie Ramnarine: Radiation Therapy Team 3 Imaging Specialist (December 2022)

Tatiana Ritchie: Radiation Therapy Pediatric Site Leader (November 2022)

Jenny Tam: Radiation Therapy CNS Site Leader (November 2022)

Vanessa Wan: Radiation Therapy Team 4 Imaging Specialist (January 2023)

Katherine Del-Poso Lee — Lorella Divanbeigi — Benoit Guibord — Christine Hill — Tony Lam — Zaynab Muraj

Alana Pellizzari — Marie Ramnarine — Tatiana Ritchie — Jenny Tam — Vanessa Wan

RMP Physician Assistant (PA) Team: Dr. Derek Tsang (RMP PA Supervisor), Dr. Richard Tsang (UHN MD Co-PA Lead), Maitry Patel, Samantha Parmelee, Karina Vyas, Hayley Mah

Radiation Therapists redeployed during the COVID-19 pandemic: Angela Cashell, Melanie Padiachy, Vickie Kong, Andrea Shessel, Kelly Guo

QUALITY & SAFETY

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
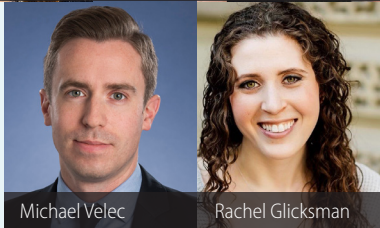
THE NEW MR SAFETY COMMITTEE
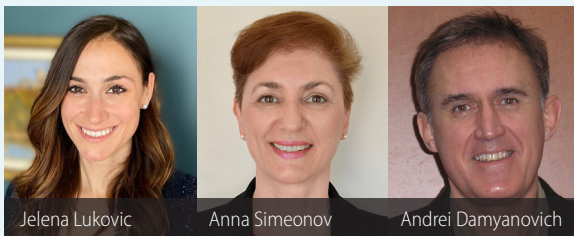
Jelena Lukovic   Anna Simeonov   Andrei Damyanovich

Michael Velec   Rachel Glicksman

In 2022, a magnetic resonance imaging (MR) safety working group was formed in RMP. The working group was led by **Anna Simeonov**, **Rachel Glicksman**, **Michael Velec**, and **Andrei Damyanovich** to evaluate MR safety initiatives in RMP. In March 2023, the MR Safety Working Group was formalized to a permanent MR Safety Committee to provide continuous oversight on MR programmatic activities across RMP's three dedicated MR facilities: MRgRT, 3T MRsimulator, and the MRL. The new committee will review, maintain, and update MR safety policies and procedures; provide oversight for staff using MR facilities; and ensure appropriate MR training and maintenance of credentials to ensure the safety of staff, patients, and colleagues.

The RMP MR Safety Committee is co-chaired by **Jelena Lukovic** (MR Medical Director; MRMD), Anna Simeonov (MR Safety Officer; MRSO), Andrei Damyanovich (MR Safety Expert; MRSE), and Michael Velec (MR-guided Radiotherapy Program Leader), consistent with the recommendations of the American College of Radiology Manual on MR Safety (2020). Together, the committee will work to ensure a safe, effective, and efficient clinical and research MR program in RMP.

INCIDENT REPORTING

The RMP Quality Committee reviews incident reports by type and severity on a monthly basis. In the spring of 2022, incident reporting rates in RMP rose by ~30% from 2021. The RMP Quality Committee performed an assessment of the incident reporting rates and determined that the increase was largely due to reported patient transportation delays, which has been an ongoing challenge and focus over the past two years. A Working Group with membership from Radiation Therapy Leadership, the RMP Quality Committee, and Transportation Leadership was established to address this particular issue and incidents of this nature have since decreased by 10-fold.

QUALITY EDUCATION

The RMP Quality Committee has identified quality education as a priority, as conferences on quality and safety were put on hold due to the COVID-19 pandemic. The committee will work to develop a competency-based quality education plan for RMP. Quality topics have been presented at existing virtual forums and a "Quality Matters" blog article was piloted in RMP to explore new avenues for quality communication. In February 2023, RMP's first incident reporting information session since the start of the pandemic was held. A second training session on the London Protocol Framework for Comprehensive Investigations was held in April 2023 to the refreshed QuinCy team.

LEADERSHIP APPOINTMENTS

Leigh Conroy was appointed as the RMP Physics Quality and Safety Lead, effective May 2023, succeeding Andrea McNiven, who held this role since 2020.

Jelena Lukovic was appointed as the inaugural Medical Director, Magnetic Resonance Imaging Program (MRMD) at RMP, effective March 1, 2023. In this new role, Jelena will oversee MR programmatic activities in RMP and chair the MR safety committee together with Anna Simeonov, Andrei Damyanovich, and Michael Velec.

EDUCATION

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

27	BSc Medical Radiation Sciences students
20	Undergraduate Medical Education students
2	CARO-CROF students
19	Summer students

POST-GRADUATE

23	Radiation oncology residents
31	Radiation oncology fellows
5	Medical physics residents
18	Strategic Training in Transdisciplinary Radiation Science for the 21st Century scholars

CONTINUING EDUCATION

103	AEP external participants
3	Personalized Learning Program participants
24	Observers from 7 countries

Academic year statistics

AEP RETURNS IN PERSON

On March 23, 2023, the Accelerated Education Program (AEP) launched its first in-person course since the start of the COVID-19 pandemic, entitled "Liver, Pancreas and Upper GI Oligometastases Imaging and SBRT." Led by **Jelena Lukovic**, **Laura Dawson**, and **Ali Hosni**, AEP welcomed 25 participants to RMP from around the world including Hong Kong, Singapore, Australia, Ethiopia, England, Ireland, and the US. In addition to our own experts, AEP drew on the expertise of local external collaborators Masoom Haider from the Joint Department of Medical Imaging (JDMI), Rob Grant from Medical Oncology, and Elizabeth Lee from the Toronto Liver Institute. Dr. Michael Chuong from the Miami Cancer Institute joined as guest faculty to share his experiences with MR-integrated external beam radiation therapy and proton therapy for upper GI tumours.

Special thanks to our many leaders and behind the scenes contributors, including **Teodor Stanescu**, **Alana Pellizarri**, **Grace Wu**, **Andrea Shessel**, **Jennifer Dang**, and our **GI fellows**, who contributed to case building, an important part of AEP courses. We are grateful to all Team RMP who dedicated their time to making the course a success.

> " It feels good to be back in the saddle – it reminded me how lucky I am to work with such brilliant and generous people. This department is most definitely a treasure and I feel honoured to be able to showcase it to our global colleagues every once in a while in our AEP courses "

Nicole Harnett, AEP Program Director

Michael Chuong and Jelena Lukovic

RMP WELCOMES SUMMER STUDENTS

RMP welcomed 19 summer students in 2022. Despite restrictions due to the COVID-19 pandemic, students produced outstanding work and shared valuable experiences with their supervisors. The RMP Summer Student Research Day took place on August 11, 2022. Students presented their summer projects to peers and RMP faculty, 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:

> " I really enjoyed the summer program. I liked how students were able to get involved with professional development series and other learning opportunities, such as the Cancer 360+ program, virtual rounds, and cancer survivorship research rounds... I found that these opportunities allowed me to have a broader and more nuanced understanding of cancer care at UHN and all the different people from a wide range of disciplines who are involved in ensuring that the physical, mental, emotional, and spiritual needs of patients at UHN are met. "

Summer Student

RMP WELCOMES INTERNATIONAL OBSERVERS

In 2023, RMP re-opened its in-person education programs after three years of pandemic-related closures. RMP has been the host of several international guests since January 2023:

Eskadmas Yines is a medical physicist at Black Lion Hospital in Addis Ababa, Ethiopia. UTDRO and Addis Ababa University launched a collaboration in 2016 with the aim of capacity building in radiation medicine through education. Black Lion Hospital, the first radiation oncology center in Ethiopia, is RMP's clinical partner. With support from the Michener Institute at UHN, the PM Global Oncology Program, and AEP, RMP has delivered virtual teaching for radiation oncology residents and radiation therapists from Ethiopia. Eskadmas joined RMP for a two-week visit to deepen knowledge exchange in technology implementation in a low-/middle-income country (LMIC) setting and map out future collaborative plans.

Guan Da, Samantha, and **Timothy** are a team of two radiation therapists and one radiation oncologist from the National University Hospital of Singapore. They visited RMP for three weeks to learn about our advanced practice in radiation therapy (APRT) model, having heard about the work of our APRTs and CSRTs. Hosts **Joanna Javor** and **Biu Chan** joined many other RMP staff and faculty who guided the observers in identifying local needs for an APRT model of care.

Vanessa Yeung is a radiation oncologist from Hong Kong who attended the AEP Liver, Pancreas and Upper GI Metastases Imaging and SBRT course. She stayed on for a four-week placement to obtain a deeper knowledge of SBRT for upper GI tumours.

We are grateful to Team RMP for accompanying our learners from around the world and making these commitments to our international colleagues possible. We also thank **Jenny Vargas** for her support and making our visitors feel welcome.

Eskadmas Yines and Kathy Mah

Vanessa Yeung and Rebecca Wong

National University Hospital of Singapore Team

THE U OF T MEDICAL PHYSICS SPECIALIZATION INAUGURAL SYMPOSIUM

The University of Toronto Department of Medical Biophysics (MBP) Medical Physics PhD Specialization was created in collaboration with the medical physics departments at the Princess Margaret and Sunnybrook-Odette Cancer Centre. The program, which was accredited by CAMPEP (Commission on Accreditation of Medical Physics Education Programs) in 2023, is designed to prepare students for a future in the medical physics profession.

To celebrate this milestone, an inaugural symposium was held at the Princess Margaret on April 14, 2023. With over 70 students and faculty in attendance, the symposium highlighted the historical impact of the U of T medical physics community on research, clinical practice, and industry. Speakers included Dr. Jerry Battista (Western University) and Dr. David Jaffray (UT MD Anderson Cancer Center), who offered a glimpse into the future of medical physics. Panel discussions highlighted career trajectories in medical physics spanning industry, academia, clinical care, and regulation. Congratulations to our **RMP Department of Medical Physics** on their contributions to the successful launch of the MBP Medical Physics PhD Specialization.

LEADERSHIP APPOINTMENTS

Angela Cashell: Appointed as Chair of the Radiation Therapy Professional Development Support Committee in March 2023

Patricia Lindsay: Appointed as Interim Director of the Physics Residency Program at UTDRO in April 2023
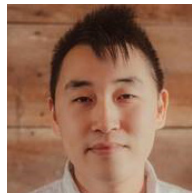
Laura Dawson: Appointed as Chair of UTDRO for a five-year term in January 2023

Jan Seuntjens: Appointed as Interim Chair of UTDRO in September 2022 through December 2022

Kathy Han: Appointed as Interim Director of Equity, Inclusion, and Professionalism at UTDRO in February 2022

Michael Yan: Appointed as RMP Rounds Lead in January 2023

EXCELLENCE IN TEACHING

Alejandro Berlin, Colleen Dickie, Meredith Giuliani, Fei-Fei Liu, Richard Tsang, John Waldron (Princess Margaret COVID Steering Committee): Outstanding Contribution to Cancer Education Award, PM Cancer Education Program (September 2022)

John Cho: Undergraduate Medical Education Best Clinical Teaching, UTDRO (November 2022)

Ezra Hahn: Residents' Award for Excellence in Clinical Teaching, UTDRO (June 2022)

Fei-Fei Liu & Tony Tadic: Postgraduate Medical Education Excellence in Research Supervision Award, UTDRO (November 2022)

Patricia Lindsay: Professional Development & CME Award, UTDRO (November 2022)

Andrea McNiven: Cummings Education Leadership Award, UTDRO (November 2022)

Aruz Mesci: Postgraduate Medical Education Advocacy & Mentorship Award, UTDRO (November 2022)

Lynn Nguyen: Dr. Marie Louise Murphy Medical Education Award, UHN (May 2022)

Alejandro Berlin · Colleen Dickie · Meredith Giuliani · Fei-Fei Liu · Richard Tsang · John Waldron · John Cho

Ezra Hahn · Tony Tadic · Patricia Lindsay · Andrea McNiven · Aruz Mesci · Lynn Nguyen

ACADEMIC APPOINTMENTS

Alejandro Berlin: Promoted to rank of Associate Professor at UTDRO (July 2022)

John Cho: Promoted to rank of Associate Professor at UTDRO (July 2022)

David Kirsch: Appointed as Professor at UTDRO (May 2023)

Andrew McPartlin: Appointed as Assistant Professor at UTDRO (July 2022)

Monica Serban: Appointed as Assistant Professor at UTDRO (August 2022)

Jillian Tsai: Appointed as Assistant Professor at UTDRO (November 2022)

Yat Tsang: Appointed as Associate Professor at UTDRO (May 2023)

Philip Wong: Promoted to rank of Associate Professor at UTDRO (July 2022)

Michael Yan: Appointed as Assistant Professor at UTDRO (July 2022)

RESEARCH

RMP at the Princess Margaret is a world leader in radiation medicine research aimed at developing more precise, personalized treatments to cure more patients with fewer side effects. Our research spans the full spectrum from fundamental biological studies through translational biology and physics to clinical trials, health service, and education research. A unique strength of our program is the diversity of investigators with respect to both expertise and professional or scientific background. Interdisciplinary research is actively encouraged, reflecting the culture that is foundational to the day-to-day care of patients.

RMP is disrupting the radiation treatment landscape through new response-driven adaptive radiotherapy research and knowledge dissemination to ensure the right treatment at the right time for every patient. RMP is accomplishing this through innovative approaches that integrate clinical care and research, learning from all of our patients while focusing on the outcomes that matter most to patients throughout their cancer experience. RMP research activities are strategically focused on six key domains to accelerate the availability of response-driven adaptive radiation therapy for every patient:

1. **Radiogenomics**
2. **Radiomics**
3. **MR-guided radiotherapy**
4. **Oligoprogression**
5. **Regenerative radiation medicine**
6. **Patient-reported outcomes**

These research themes are highly integrated and closely aligned with the research objectives of the Princess Margaret, UHN, and University of Toronto Department of Radiation Oncology. There is strong collaboration with other academic and industry-based research groups within UHN, as well as external groups locally, nationally, and internationally.

NOVEL DISCOVERIES

| $42M peer-reviewed funding | 259 peer-reviewed publications | 137 peer-reviewed grants | 313 active clinical studies | 116 active prospective clinical studies | 10.2% new patients accrued to prospective clinical studies |

*Calendar year statistics

NOTABLE PUBLICATIONS

Characterizing Cell-free DNA Topology in Cancer

Scott Bratman and colleagues used a DNA-targeted approach to perform a comprehensive assessment of total cell-free DNA (cfDNA) topology in cancer using preclinical models and patient samples.[i] Published in *JCI Insight*, the results help redefine our knowledge of cell-free DNA structure in the bloodstream of cancer patients.
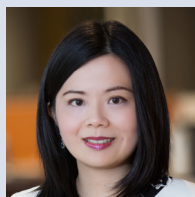
Metformin May Improve RT Response to Cervical Cancer

A team led by **Kathy Han** assessed the efficacy of metformin in reducing tumor hypoxia and improving patient response to RT for locally advanced cervical cancer.[ii] Published in *Clin Cancer Res*, the authors observed that metformin reduced cervical tumor hypoxia in patients with a trend towards improved two-year disease-free survival.
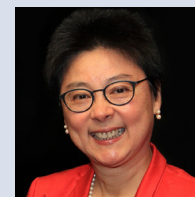
Prognostic Significance of CD8+ TILs in Nasopharyngeal Cancer

Fei-Fei Liu and colleagues assessed the prognostic value of various tumour-infiltrating lymphocytes (TILs) in nasopharyngeal cancer.[iii] Published in *Clin Cancer Res*, their data highlighted the prognostic significance of CD8+ TILs and suggest future investigations of cellular-based immunotherapies using CD8+ lymphocytes.
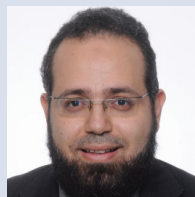
A Prediction Score for Oral Cavity Cancer Recurrence

A team led by **Ali Hosni** developed a prediction score for patients with oral cavity squamous cell carcinoma (OSCC) at risk of recurrence using patient-derived xenografts and clinical risk factors.[iv] Published in *JAMA Otolaryngol Head Neck Surg*, results validated the prediction score's prognostic utility for recurrence of OSCC.

Eliminating Tattoos for Short Course Palliative RT

A team led by **Joanna Javor** used permanent marker and adherent transparent film dressing (Tegaderm™) in lieu of permanent ink tattoos for patients receiving palliative image-guided RT (IGRT).[v] Published in *J Med Imaging Radiat Sci*, data revealed the Tegaderm™ dressing maintained similar set-up time, mismatch error, and number of imaging procedures while being more cost-effective than tattoos.
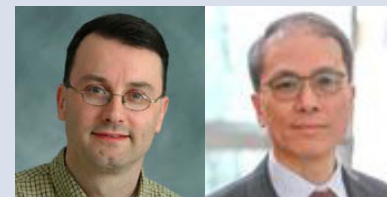
Noise-Based Image Harmonization for PET-Derived Radiomics Features

Harald Keller, **Ivan Yeung**, and colleagues investigated the efficacy of a harmonization strategy in increasing robustness and feature agreement of noise-sensitive radiomics features calculated on PET images.[vi] Published in *Tomography*, the authors reported that noise-based image harmonization increased repeatability and reproducibility with a trend towards high feature agreement.
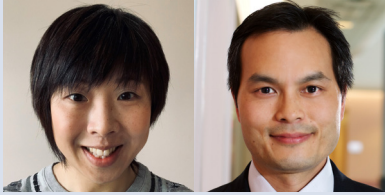
A-IMRT and 3DOF-VMAT Deliver Clinically Acceptable Prostate Dose

Vickie Kong, **Peter Chung**, and colleagues compared dosimetry of prostate stereotactic RT delivered by adaptive intensity modulated RT (A-IMRT) or 3 degree of freedom volumetric modulated arc therapy (3DOF-VMAT).[vii] Published in *Tech Innov Patient Support Radiat Oncol*, their data revealed that both systems delivered clinically acceptable dose to the prostate with greater sparing of the rectum in the high dose region under A-IMRT.

Limitations of 5-Fraction SBRT for Oligometastases

Rebecca Wong, **Patricia Lindsay**, and colleagues analyzed long-term outcomes of a 5-fraction SBRT normal tissue tolerance adapted strategy for oligometastases.[viii] Published in *Int J Radiat Oncol Biol Phys*, the findings highlighted limitations of SBRT for cure and progression-free survival in oligometastases, and suggest further research is needed on combinations of SBRT with novel systemic therapy to delay or prevent distant progression.

Liver SBRT Dose Accumulation in SBRT and Sorafenib for HCC

Jasmine Chen, **Michael Velec**, and colleagues accumulated liver SBRT doses to evaluate effects of anatomical changes on dose and toxicity in patients treated with SBRT and sorafenib for hepatocellular carcinoma (HCC).[ix] Published in *Radiother Oncol*, the authors found that patients with reduced liver volume during SBRT and sorafenib had larger accumulated dose increases to normal tissue compared to patients with stable liver volume.

THE RMP RESEARCH RETREAT

The RMP Research Retreat was held on November 11, 2022. Over 60 attendees gathered in person at the OPG Mini-Auditorium to identify strengths and research opportunities in RMP, define critical factors in planning research directions, and find solutions for existing barriers to research in RMP. Research themes focused on harnessing technology for improved outcomes, accelerating data-driven radiation science innovation, and tracking and improving patient response and outcomes. Following a moment of silence in honour of Remembrance Day, participants gathered in break-out groups to explore each theme more deeply. Special thanks to all attendees and speakers, including **Thomas Purdie**, **Srinivas Raman**, **Tony Tadic**, and **Jennifer Croke**, as well as AEP Program Director, **Nicole Harnett** and RMP Director of Research, **Michael Milosevic** who facilitated and led the successful retreat.

EXCELLENCE IN CANCER RESEARCH

Fei-Fei Liu was appointed as the Scientific Director of the Canadian Institutes of Health Research (CIHR) Institute of Cancer Research (ICR) for a four-year term, effective September 2022. She is the first clinician-scientist and radiation oncologist to be appointed Scientific Director of ICR, one of the 13 institutes of CIHR. Fei-Fei will work to develop and advance Canadian cancer research and training initiatives while supporting the implementation of CIHR's Strategic Plan. During her term, UHN will serve as the ICR's host organization.

NOTABLE AWARDS AND DISTINCTIONS

Jennifer Croke: Appointed to the Cancer Patient-Reported Outcomes Measures (PROMs) Response Measurement Working Group, representing the Toronto Central South region (September 2022)

Andrew Hope: European Society for Therapeutic Radiology and Oncology (ESTRO) Interdisciplinary Best Paper for "Prospective assessment of AI screening for interstitial lung disease (ILD) in radiotherapy" (April 2023)

Ali Hosni: Canadian Cancer Trials Group (CCTG) Dr. Ralph Meyer Phase III Program Young Investigator Award (April 2023)

Joanna Javor: Canadian Association of Radiation Oncology (CARO) Supportive Care Award (October 2022)

Jelena Lukovic: CIHR Early Career Award in Cancer (February 2023)

Thomas Purdie: UTDRO Excellence in Research Leadership Award (November 2022)

Jolie Ringash: CCTG Founder's Award - Dr. Joseph Pater Excellence in Clinical Trials Research Award (April 2023)

Danielle Rodin: UTDRO Rising Star Award (November 2022)

Michael Velec: ESTRO Best RTT Award for "Randomized trial of person-centered versus standard RTT care for breast cancer patients NCT04507568" (May 2023)

Jennifer Croke · Andrew Hope · Ali Hosni
Joanna Javor · Jelena Lukovic · Thomas Purdie
Jolie Ringash · Danielle Rodin · Michael Velec
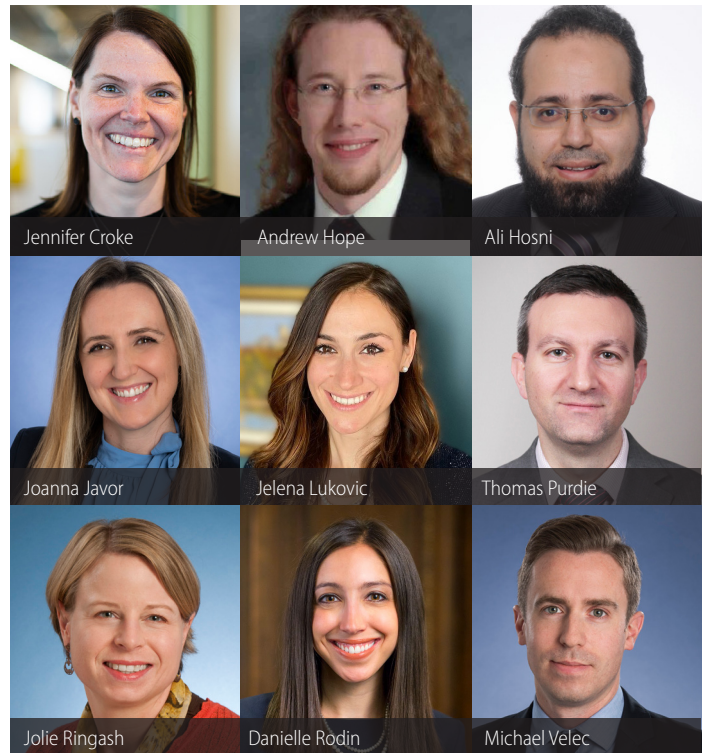
NOTABLE PEER-REVIEWED FUNDING

Scott Bratman: Accelerating clinical translation of non-invasive imaging and molecular biomarkers (ACT-NIMBly) towards adaptive clinical trials in head and neck oncology. Princess Margaret Catalyst Grant.

James Chow: Optically stimulated luminescence detectors for FLASH dosimetry in cancer treatment. New Frontiers in Research Fund.

Meredith Giuliani: Building an online education and skills development program for informal caregivers of cancer patients: caregiver accessible cross-continuum education & skills system for cancer (Caregiver ACCESS). MSH-UHN AMO Innovation Fund.

Rachel Glicksman: Duration of enzalutamide and ADT with metastasis directed therapy in oligometastatic cancer of the prostate (DIRECT). UTDRO Collaborative Seed Grant.

Jelena Lukovic, Rebecca Wong: An international randomized trial of neoadjuvant chemoradiotherapy for esophageal squamous cell carcinoma versus definitive chemoradiotherapy with salvage surgery as needed - the NEEDS trial. CIHR Project Grant.

Thomas Purdie: Machine learning assisted decision support platform for radiation treatment assessment. NSERC Discovery Grant.

Thomas Purdie, Alejandro Berlin, Chris McIntosh, Leigh Conroy, Kathy Han, Ali Hosni, Andrea McNiven, Jeff Winter: Clinical deployment of an end-to-end artificial intelligence only radiotherapy treatment planning and decision support workflow. CIHR Project Grant.

Alexandra Rink: AI assisted organ and target segmentation for cervix brachytherapy treatment planning. CIHR Project Grant.

Danielle Rodin: Unlocking our data: creation of a robust dataset for the real-world clinical and economic evaluation of lymphoma management. CCS Data Transformation Grant.

Jan Seuntjens, David Hodgson: Towards a low-cost, optimized proton therapy accelerator. CIHR Project Grant.

Teodor Stanescu: Design and optimization of medical devices for MRI-guided radiotherapy applications. NSERC Discovery Grant.

Jillian Tsai: Consolidative use of radiotherapy (CURB2) for oligoprogressive non-small-cell lung cancer – a prospective randomized phase 3 study. UTDRO Collaborative Seed Grant.

Jeff Winter: Biological MR-guided adaptive prostate radiation therapy on the MR-LINAC. AbbVie-CARO Uro-Oncologic Radiation Award (ACURA).

Philip Wong: Sarcoma micro-dissected tumor (MDT) generation. MSH-UHN AMO Innovation Fund.

Philip Wong: Lab-on-chip testing ex vivo tumors treated with nonthermal plasma. New Frontiers in Research Fund.

*Only RMP PIs/Co-PIs listed

Clinical Research Program (CRP) Team

RADIATION MEDICINE PROGRAM
CLINICAL RESEARCH PROGRAM

TEAM RMP

With a team of over 370 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 2022, 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.

James Chow was awarded the Fellowship of the Institution of Engineering and Technology (IET) after joining the institution 26 years ago. FIET is the highest grade of membership in the association, awarded to members with sustained levels of achievement in leadership, responsibility, creativity, innovation, reputation, insight, and experience.

Catherine Coolens and **Thomas Purdie** were inducted as 2022 Fellows of the American Association of Physicists in Medicine (AAPM). This prestigious distinction recognizes members of AAPM who have made outstanding contributions to the field of medical physics or provided exceptional service to the association.

David Hodgson was awarded the 2023 Canadian Association of Radiation Oncology (CARO) Gold Medal and Gordon Richards Lectureship. The Gold Medal is the society's highest honour, which is presented to a Canadian Radiation Oncologist in recognition of outstanding contributions and sustained commitment to the field of radiation oncology. Previous RMP recipients include Padraig Warde (2021), Laura Dawson (2018), Michael Milosevic (2015), and Fei-Fei Liu (2012).

Fei-Fei Liu was elected as a 2022 Fellow in the Canadian Academy of Health Sciences (CAHS) in recognition of her outstanding contributions to research, clinical care, and leadership in radiation oncology. Fei-Fei was also presented with a plaque by Dr. Jim Metz, Chair at the University of Pennsylvania, acknowledging her role as Chair of the Society of Chairs of Academic Radiation Oncology Programs (SCAROP) for 2020-2021.

Shirley Prasad was appointed as RMP DRO Administrative Services Manager, effective April 2023. Shirley has a background in project management and project consulting. Prior to her appointment, she was an Operations Manager at the Princess Margaret Cancer Foundation, where she led strategic projects and successfully implemented process changes to improve efficiency. We thank Marcia Bowen who stepped in as Interim DRO Administrative Services Manager as well as Catarina Lam for providing support following Tracey Williams' retirement.

Richard Tsang was inducted as a 2022 American Society for Radiation Oncology (ASTRO) Fellow. Richard is the 10th Canadian to receive the prestigious designation since its establishment in 2006, and joins six other PM staff who have been inducted. Previous PM recipients include Bernard Cummings (2007), Mary Gospodarowicz (2007), Brian O'Sullivan (2007), Laura Dawson (2016), Fei-Fei Liu (2019), and David Hodgson (2021).
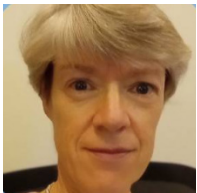
Monique van Prooijen was elected Secretary-Treasurer of Medical Physics for World Benefit (MPWB) for a three-year term, effective January 2023. In this role, Monique will oversee MPWB's US and Canadian finances and participate in developing ongoing and new projects as a board member.

Radiation Oncology	David Kirsch, Jillian Tsai, Michael Yan
Medical Physics	Hanna Bazinet, Nicole Dewey, Aaron Lin, Michael Micalizzi, Ruti Shahin
Radiation Therapy	Wardah Ahsan, Daniella Chee, Jiawei Hu, David Le, Jinhong (Jina) Min, Kristianne Nichol, Aaliya Rajani, Aushin Sanjay, Ankar Sharma, Shadman Siddique, Lauren Silver, Kelsie Van Hoof
Administration/ Research/Operations	Pia Crisostomo, Yasmine Lapps, Emily Mao, Eliona Mino, Shirley Prasad, Savina Primi, Jane Tsai, Siqi Zhu
Clinical Research Program	Kabir Chauhan, Edel Sexton
Physician Assistants	Hayley Mah, Karina Vyas

*Permanent new staff hires listed

SUSTAINED SERVICE

Congratulations and thank you to our dedicated RMP members who have reached their ≥25 year service milestone in 2022.

25 Years	Andrea Bezjak, Charles Catton, Fei-Fei Liu, Jolie Ringash, Jerry Roussos, Richard Tsang, John Waldron
30 Years	Gina Capone, Michael Milosevic, Tara Rosewall, Tu Huan Tran, Julie Wenz
35 Years	Anthony Fyles
45 Years	Wendy Flanagan, Gregory Thompson

HONOURING A LIFETIME OF ACHIEVEMENT

In 2022-23, RMP celebrated the well-deserved retirements of radiation oncologist James Brierley (June 2022); radiation therapists **Gary Chaulk** (May 2022), **Fionna Li-Cheung** (June 2022), **Lani Wong** (June 2022), and **Simon Leung** (September 2022); administrative assistant **Ellen Hoffman** (August 2022); and DRO Administrative Services Manager **Tracey Williams** (March 2023).

RMP thanks Jim, Gary, Fionna, Lani, Simon, Ellen, and Tracey for their decades of exceptional service which has enabled us to deliver compassionate, patient-centered care at the Princess Margaret.

Jim Brierley   Gary Chaulk   Fionna Li-Cheung   Lani Wong   Simon Leung   Ellen Hoffman   Tracey Williams

THE RMP MEDICAL PHYSICS RETREAT

The RMP Medical Physics Retreat was held at The Kingbridge Centre in King City, Ontario, on May 5-6, 2023. The two-day retreat brought together our Department of Medical Physics to discuss the value of medical physics at PM, strategies to enhance medical physics leadership and involvement in RMP, and future goals in developing leaders in medical physics education, clinical care, and research. Following introductory remarks from **Jan Seuntjens**, **David Kirsch**, Keith Stewart, and Ross Wallace (Santis Health), teams gathered to explore five key areas of focus on defining the medical physics identity and advancing professional engagement, well-being, and career development. Staff also participated in team-building activities and outdoor hikes.

We acknowledge the organizers of the retreat: Jan Seuntjens, **Jean-Pierre Bissonnette**, **Catherine Coolens**, **Leigh Conroy**, **Thomas Purdie**, **Teodor Stanescu**, **Makan Farrokhkish**, **Fe Berbano**, **Ruti Shahin**, **Jason Ellis**, and **George Parsons**. We also thank the Santis Health Group for their support with facilitation.

Medical Physics Retreat, May 5 & 6, 2023
Kingbridge Conference Centre & Hotel

RMP GIVES BACK TO OUR COMMUNITIES

In 2022-2023, Team RMP was proud to take part in community initiatives and demonstrate our spirit of giving back.

During Earth Month, the RMP Green Team dusted off its "green thumb" and participated in greening activities across our UHN community. **Kitty Chan** attended a shoreline cleanup with the UHN Green Team at Ashbridge's Bay on April 30, 2022. **Renata Czech** and **Alex Vitkin** volunteered to clean and plant herbs in the Indigenous Michener Gitigan Healing Garden. Our RMP Green Team and Medical Physics Admins also encouraged our teams to participate in the 2022 Waste Reduction Week Inter-Hospital Challenge to promote environmental sustainability awareness.

A big thank you to Team RMP who supported local communities by organizing donations for the 2022 PM Daily Bread Food Bank Challenge ahead of Thanksgiving weekend. **Angela Alivio**, **Fayaza Syed**, and the Radiation Therapy team headed by **Kelly Guo** led the PM competition for Team RMP at OPG. We thank everyone in RMP for their generous donations which went towards alleviating food insecurity in our Toronto communities.

Finally, special shoutouts to **Angela Alivio**, **Marcia Bowen**, **Elizabeth DeOcampo**, **Colleen Dickie**, **Jan Seuntjens**, and **Yat Tsang** who helped serve Team UHN at the Toronto Rehab – University Centre & Princess Margaret Cancer Centre Staff Appreciation BBQ on September 23, 2022.

NOTABLE AWARDS AND DISTINCTIONS

On November 15, 2022, RMP held its hybrid (in-person and virtual) awards ceremony. There were 25 in-person attendants and over 100 online participants. RMP congratulates and thanks all award recipients for their exceptional dedication and contributions to the program.

RMP Education Awards

- Distinction in Professional Mentorship Award: **Colin Robertson** and **Jeff Winter**
- Distinction in Teaching Award: **Rachel Glicksman**
- Trainee Excellence in Education Award: **David Mak**
- Excellence in Education Support Award: **Eleni Sachinidis**
- Best RMP Rounds: **Monique van Prooijen**
- AEP Highest Overall Teaching Effectiveness Score Award: **Jeff Winter**

RMP Research Awards

- Paper of the Year - Radiation Oncology: **Derek Tsang** - Hearing loss after radiation and chemotherapy for CNS and head-and-neck tumors in children. *J Clin Oncol*. 2021;39(34):3813-3821.
- Paper of the Year - Medical Physics: **Jean-Pierre Bissonnette** - Non-small cell lung cancer stage migration as a function of wait times from diagnostic imaging: a pooled analysis from five international centres. *Lung Cancer*. 2021;155:136-143.
- Paper of the Year - Radiation Therapy: **Michael Velec, Maureen Mort** - MRI evaluation of normal tissue deformation and breathing motion under an abdominal compression device. *J Appl Clin Med Phys*. 2021;22(2):90-97.
- Paper of the Year – Collaborative: **Chris McIntosh, Leigh Conroy, Tim Craig, Charles Catton, Mary Gospodarowicz, Vickie Kong, Tony Lam, Srinivas Raman, Padraig Warde, Peter Chung, Alejandro Berlin, Thomas Purdie** - Clinical integration of machine learning for curative-intent radiation treatment of patients with prostate cancer. *Nat Med*. 2021;27(6):999-1005
- Exceptional Research Support: **Elizabeth Evans, Maureen Mort, Douglass Vines**
- Research Leadership Award: **Michael Velec**
- Top Clinical Trial Accrual Investigator Award: **Srinivas Raman**

RMP Clinical Awards

- Exceptional Program Service Award: **Colin Robertson** and **Tracey Williams**
- Distinction in Quality & Process Improvement Award: Core RMP QBP Team (**Julie Wenz**, **Wendy Issa**, **Emma Ito**, **Lucy Lu**, **Wei Zhou**, **Heather Jang, Elizabeth Ng**, **Catarina Lam**, **Colleen Dickie, Christine Hill**), **Heather Jang**, and **Benjamin Lok** (Epic implementation)
- Distinction in Technical Improvement Award: **Grace Tsui**
- Excellence in Patient Experience Award: **Adrian Fung** and **Karen Tse**

CELEBRATING THE LEGACY OF FEI-FEI LIU

On September 1, 2022, RMP Head **Fei-Fei Liu** stepped down to pursue a new role as Scientific Director of the Canadian Institutes for Health Research (CIHR) Institute of Cancer Research (ICR). Over the past ten years, Fei-Fei guided RMP to exciting new frontiers in clinical care, research, education, technological development, and collaboration with her strong leadership, vision, and drive for excellence. Under her leadership, RMP saw groundbreaking achievements, including building a consortium with UHN, SickKids and other partners to make a proposal to the government to bring proton therapy to Ontario and Canada, breakthroughs in AI-based systems and automated care, as well as the development of a dynamic, diverse, and exceptionally talented team who are transforming the radiation medicine landscape locally, nationally, and globally. She managed the team and the program through the COVID-19 pandemic with perseverance, optimism, and inspiration.

On September 22, 2022, Team RMP held a celebration for Fei-Fei. The hybrid event brought together an array of talented speakers and colleagues in person at the OPG HIVE, with over 95 additional participants from across RMP, PM, and UHN tuning in virtually to celebrate Fei-Fei's leadership and achievements at RMP over the past decade.

We are grateful to Fei-Fei for her excellent leadership and wish her all the best in her new role. We also extend our deepest gratitude to **Richard Tsang**, who stepped in as Interim Head in September 2022 and served exceptionally for eight months prior to the appointment of our new Head of RMP, **David Kirsch**.

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