Radiation Oncology
UNIVERSITY OF TORONTO

DEPARTMENT OF RADIATION ONCOLOGY

ANNUAL REPORT
2017–2018

VISION

Global leadership in Radiation Oncology by transforming practice through innovation and excellence in Research and Education.

MISSION

We prepare future radiation medicine leaders, contribute to our communities, and improve the health of individuals and populations through discovery, application, and communication of knowledge.

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DR. FEI-FEI LIU
CHAIR'S WELCOME

Welcome to the University of Toronto's Department of Radiation Oncology (UTDRO) Annual Report for 2017–2018.

This has been an exciting and eventful year for UTDRO. We concluded our 2014–2017 strategic plan, *The Transformative Agenda: Roadmap to 2017*, which guided us in achieving excellence in the areas of research, education and systems influence. This year, we refreshed our strategic plan (2018–2022) entitled: *Reflect. Transform. Lead.* that will maintain our Vision of **Global leadership in Radiation Oncology by transforming practice through innovation and excellence in research and education**. I would like to thank all the faculty and trainees who have participated in the consultation process over this past year, and in particular, the leadership and support from the 13-member Strategic Planning Steering Committee.

We have defined five specific goals that we will work towards to continue our global leadership role, and transform practice around the world. We are the home of internationally renowned educators, researchers, thought leaders, innovators and system influencers. We have a brand that continues to grow; synonymous with innovation and excellence. Finally, we have set a high bar whilst fostering an environment that is supportive and enabling. To read more about our new and refreshed strategic plan, please visit radonc.utoronto.ca.

We are in a particularly exciting time as radiation medicine continues to evolve with new technologies, such as artificial intelligence being incorporated into our everyday work life. Through the research of our own faculty and advances such as automated planning, we aspire to remain on the cutting edge, as we develop, examine, and disseminate how radiation medicine practice will evolve in the years to come.

Throughout the past year, many of our faculty members were recognized for their outstanding achievements; continually enhancing our reputation as one of the top academic cancer programs internationally. Dr. Eileen Rakovitch received the 2018 Israel Cancer Research Fund Women of Action Award; Dr. Ananth Ravi received the Cancer Care Ontario Human Touch Award; Ms. Sophie Huang was the recipient of the 2019 Welch Memorial Lecturer Award; and Dr. Michael Velec received the Canadian Association of Medical Radiation Technologists Early Professional Achievement Award. Along the research front, Dr. Benjamin Lok received the 2018 International Association for the Study of Lung Cancer Young Investigator Award, and the American Society of Clinical Oncology (ASCO) Conquer Cancer Foundation Career Development Award. Dr. Kathy Han was the recipient of an American Society for Radiation Oncology (ASTRO) 2017 Annual Meeting Travel Award. Dr. Normand Laperriere was a co-winner of the Till and McCulloch Best Paper of the Year Award from the Princess Margaret Cancer Research Institute for his landmark publication in the *New England Journal of Medicine*. Ms. Vickie Kong received a 2017 Sanofi grant, and Dr. David Shultz received a Radiological Society of North America (RSNA) research seed grant. Drs. Bradly Wouters and Gregory Czarnota both received funding from the Ontario Research Fund/Canada Foundation for Innovation (CFI). Dr. James Chow was recognized for his outstanding work as a reviewer for the *Physics in Medicine and Biology Journal*. As well, Dr. Meredith Giuliani received the Competency Based Medical Education (CBME) Residency Education Implementation Award.

Congratulations to our newly-appointed and promoted faculty. Drs. William Tran and Eric Tseng were appointed as Assistant Professors. Drs. Marianne Koritzinsky and Stanley Liu were promoted to Associate Professor, and Drs. Lisa Barbera and Eileen Rakovitch were both promoted to Full Professors at UTDRO.

Several highlights from this year's events include the enduringly successful RTi3 Conference, with 155 delegates participating in three workshops, four keynote speakers, 48 oral presentations and over 70 abstracts. The Clinical and Experimental Radiobiology course had 58 registrants, 14 faculty members, including two international guest speakers. We hosted our first Technological Innovations in Prostate Cancer Radiotherapy course with 34 registrants, and 20 teaching faculty members along with two international guest speakers. Our Annual UTDRO Research Day, which celebrates the research accomplishments of our trainees, had 120 attendees with 70 trainees and 50 faculty members. Finally, we bid farewell to another year of outstanding graduates from our Residency (Radiation Oncology, and Medical Physics), Fellowship, and Medical Radiation Sciences (MRS) and Master of Health Science in Medical Radiation Sciences (MHScMRS) programs.

My sincere gratitude to Dr. Gregory Czarnota, Executive Vice Chair of UTDRO, and the three Vice Chairs Drs. Michael Milosevic, Rebecca Wong and Shun Wong, for their wise counsel, invaluable assistance, and unwavering support throughout the year. I am also deeply grateful to our Executive Committee for their hard work and continued commitment to excellence in our programs. Finally, I thank our faculty members, trainees, and UTDRO staff who have all played a vital role in maintaining our department's position as a global leader in radiation medicine.

Dr. Fei-Fei Liu, MD, FRCPC
Chair and Professor
Department of Radiation Oncology

DR. GREGORY CZARNOTA
EXECUTIVE VICE CHAIR

During this past academic year, in my new role as Executive Vice Chair of the University of Toronto, Department of Radiation Oncology, we have seen many changes. We have had to say goodbye to some of our outstanding faculty members who have assumed leadership roles outside of UTDRO or retired from practice, but have in exchange gained new, exuberant, ambitious young staff.

Our programs downtown and uptown are evolving as expertise continues to develop and mature, and our drive to be one of the top North American Departments of Radiation Oncology remains unwavering as we continue to push the boundaries in clinical excellence, teaching and education, and research.

In this era of personalized cancer medicine with "game changing" technologies like the Gamma-Knife Icon and the MR-Linac redefining the precision and accuracy of the radiation oncology paradigm, we have remained true to delivering the best radiation medicine for our patients.

DR. REBECCA WONG
VICE CHAIR REPORT
EDUCATION

UTDRO aspires to be the educator of choice internationally for radiation medicine professionals — this vision continues to drive our efforts. The accomplishments of our trainees and faculty provide the many reasons to celebrate, and demonstrate that we are indeed attaining our vision.

Our MRS BSc students excelled in their research endeavours, and were recognized with three podium presentations at RTi3 2018. International organizations acknowledged the excellence of our trainees through awards from the Canadian Association of Radiation Oncology; the Radiological Society of North America; the Brazilian National Academy of Medicine; the Association for the Study of Lung Cancer; the Canadian Society on Lymphoproliferative Disorders; and the American Society of Clinical Oncology African Organization for Research and Training (see radonc.utoronto.ca/external-trainee-awards). Our colleagues assumed important education leadership roles, including Dr. Barbara-Ann Millar as the Chair of the Royal College Radiation Oncology Specialty Committee (2017–18), and Dr. Ewa Szumacher as the Vice President of the American Association of Cancer Education (2017–18). Multiple additional external awards continue to highlight our strengths (see radonc.utoronto.ca/external-faculty-awards).

This year, we celebrated many firsts. Our Fellowship Program received accreditation from the Royal College of Physicians and Surgeons of Canada for an Area of Focused Competency (AFC) Diploma in Brachytherapy; an effort led by Dr. Gerard Morton. A new cross-discipline Fellowship in Radiation and Geriatric Oncology hosted at the Odette Cancer Centre, was spearheaded by Dr. Ewa Szumacher and her colleagues, which graduated its first trainee this year. A new UTDRO CEPD course co-directed by Drs. Charles Catton and Ewa Szumacher, entitled "Technological Innovations in Prostate Cancer Radiotherapy" highlighted inter-activity and interdisciplinary education principles, which received great reviews. RTi3, our conference that is unique in its focus on radiation therapy research and innovation, continues to grow; attracting over 155 delegates and 70 presented abstracts. Our Faculty Development Program took on a new focus under the leadership of Dr. Barbara-Ann Millar. A half-day faculty development event on Competency by Design, comprised of sharing knowledge, experience and imparting skills, was fully subscribed and highly effective in preparing us for the much anticipated changes in medical education. Sadly, after opening its doors in 2009 and having graduated 12 exceptional radiation therapists; past patterns and anticipated trends in our practice environment unfortunately led us to make the difficult decision to close our MHScMRS program after we celebrated the final graduating class of 2018.

This year, we called upon the chiefs of our oncology residency, physics residency, and fellowship programs to help imagine a dynamic alumni engagement strategy. To showcase the successes of our alumni, we created the UTDRO Alumni Award, and will celebrate our inaugural recipient at the ASTRO Alumni Event in 2018. Alumni Profiles is a new feature on the UTDRO website serving to communicate and connect this community. A UTDRO Alumni Association and a mentorship network is calling for all alumni to contribute, which is rapidly taking shape.

This year, we initiated a number of global educational opportunities with low- and middle-income countries (LMICs). Drs. Andrea McNiven, Monique van Prooijen and colleagues continue to support physicist training in Kenya. A radiation medicine seminar series focused on enabling the transition from 2D to 3D radiotherapy was delivered to practicing radiation therapists in Kenya. A second offering of our clinical research mentorship program was delivered this time to Zimbabwe radiation oncology residents. As part of the highly acclaimed Toronto Addis Ababa Academic Collaboration (TAAAC), we are working with Ethiopia, and anticipate our first class of radiation therapy students in 2019.

Finally, we would like to thank Dr. David Hodgson, who served as the Radiation Oncology Residency Research Director from July 2013 to June 2017. Dr. Hany Soliman extended his already comprehensive education portfolio to serve as the Interim Residency Research Director until Dr. Joelle Helou stepped into the role earlier this year. Dr. Derek Tsang served as the Interim Undergraduate Medical Education Program Director, as Dr. Meredith Giuliani welcomed baby Inesa Mary Giuliani to the UTDRO family. Dr. Young Lee, who served as our Physics Registrar (April 2016 – April 2018) passed on her baton this year to Dr. Steven Babic. Finally, a big thank you to all our faculty, whose creativity and dedication are absolutely invaluable as we achieve our vision of being the "educator of choice" for radiation medicine professionals.

DR. SHUN WONG
VICE CHAIR REPORT
CLINICAL AFFAIRS

The 2017–2018 year marked many outstanding achievements at UTDRO. We completed our five-year external review, and transitioned into a new strategic plan that will guide our department over the next five years.

New appointments included Dr. Gregory Czarnota to the recently-created role of Executive Vice Chair of UTDRO. Drs. Scott Bratman, Kathy Han, Eric Leung all successfully completed their three-year reviews for the continuing annual appointment within the faculty.

Dr. Lisa Barbera accepted a new role as the Head of the Division of Radiation Oncology, Department of Oncology, Cummings School of Medicine, University of Calgary, and Chief, Section of Radiation Oncology, Clinical Department of Oncology, Cancer Control Alberta, Alberta Health Services. She will continue her appointment with UTDRO until the end of 2019.

Many faculty members received outstanding awards and recognition. Dr. David Jaffray was awarded with the ASTRO 2018 Gold Medal, one of ASTRO's highest honours recognizing his outstanding contribution to the field of radiation oncology. Dr. Ewa Szumacher became the newly elected Vice-President of the American Association for Cancer Education. Dr. Andrew Loblaw was honoured as a Fellow by the American Society of Clinical Oncology in recognition of extraordinary volunteer service, and dedication and commitment to ASCO. Dr. Rebecca Wong joined the International Cancer Expert Corps Board of Directors. Dr. Alex Vitkin was awarded the Michael S. Patterson Publication Impact Prize in Medical Physics for his scientific paper focused on optical coherence tomography.

Dr. Barbara-Ann Millar was the recipient of the Colin Woolf Award for Excellence in Teaching offered through the Faculty of Medicine's Continuing Professional Development Office. Dr. Millar also became the Chair of the Radiation Oncology Specialty Committee at the Royal College of Physicians and Surgeons of Canada.

The Annual Sunnybrook Education Advisory Council recognized Dr. Edward Chow with the Allan Knight Lifetime Achievement in Teaching Award, and Dr. Ewa Szumacher with the Educating Beyond Sunnybrook Award. As well, Ms. Lisa Di Prospero was a recipient of the Tenth Annual Leo N. Steven Excellence in Leadership Award at Sunnybrook.

Finally, we offer congratulations to Drs. Marianne Koritzinsky and Stanley Liu for their academic promotions to the rank of Associate Professor. We also recognize and congratulate Drs. Lisa Barbera and Eileen Rakovitch on their academic promotions to the rank of Full Professor.

DR. MICHAEL MILOSEVIC
VICE CHAIR REPORT
RESEARCH

UTDRO is a world-leader in radiation research aimed at improving the treatment of patients with cancer. Our radiation oncologists, medical physicists, radiation therapists and radiation medicine scientists continue to collaborate and innovate along the entire patient journey from diagnosis through treatment to end-of-life care and survivorship. Many are internationally recognized for their contributions in the fields of fundamental and translational biology, medical physics, clinical trials, health services, quality of life and education research. Key research themes that span the UTDRO community include adaptive radiation oncology to ensure the right treatment at the right time for every patient, MR-guided radiation treatment to target cancer more precisely and the evaluation of patient-reported outcomes to provide more relevant insights regarding the effectiveness of our treatments. UTDRO is disrupting the global radiation treatment landscape through these and many other innovative approaches that integrate clinical care and research to learn from all of our patients, while focusing on the outcomes that matter most.

UTDRO investigators had a productive year in 2017–18, with numerous influential publications and continued growth in the number and breadth of collaborative programs locally, nationally and internationally. The total research funding available to UTDRO investigators last year was $52.6M, about half of which was for research led by a UTDRO principal investigator. Several new peer-reviewed operating and infrastructure grants were awarded despite the highly competitive funding environment, including four grants with radiation therapists as principal investigators. Two UTDRO Collaborative Research Seed Grants were awarded to teams led by Drs. Beibei Zhang and Charles Cho, and by Jennifer Croke, Meredith Giuliani, Sarah Rauth and Julia Skliarenko.

There were a total of 440 peer-reviewed research publications by UTDRO faculty in 2017–18, many in high impact journals. A high proportion of our papers were the products of interdisciplinary research teams of radiation oncologists, medical physicists and radiation therapists, and an increasing proportion included co-authors from more than one UTDRO affiliated hospital or from outside of the UTDRO community. These accomplishments reflect the overall excellence, richness and diversity of research in UTDRO, as well as the importance of collaboration as a key enabler of success.

Several UTDRO faculty members and trainees were recognized in 2017–18 for their exceptional contributions in the field of radiation oncology. Of note, Dr. Mary Gospodarowicz was awarded a University of Toronto Professorship, the highest possible academic rank for exceptional scholarly achievement and pre-eminence, and Dr. Eileen Rakovitch received the Israel Cancer Research Fund Women of Action Award. UTDRO Research Day in April showcased the exceptional research conducted by our trainees, which was also reflected in separate UT awards for research excellence to radiation oncology residents, Drs. Ezra Han, Jennifer Kwan, Penicila Lang and Srinivas Raman.

I would like to express my sincere thanks to everyone in the UTDRO community who contributed to our research successes in 2017–18, including those who committed time and resources to ensure the academic growth of our trainees and those who served as grant and abstract reviewers. In particular, I would like to thank Dr. Marianne Koritzinsky for her continued insights and support as UTDRO Director of Research, and also for her leadership with Dr. Anne Koch of the STARS21 Research Training program. Finally, I am grateful to the members of the newly formed UTDRO Research Committee, including Drs. Jean-Pierre Bissonette, Lee Chin, Tony Fyles, Adam Gladwish, Eric Leung, William Tran and Mike Velec. I look forward to working closely with them to harness the full academic potential of our program and shape the future of collaborative radiation medicine research.

RESEARCH HIGHLIGHTS

REPORTING PERIOD: JULY 1, 2017 TO JUNE 30, 2018

PUBLICATIONS

440
TOTAL PUBLICATIONS

2.47
PUBLICATIONS PER INVESTIGATOR

FUNDING

$26.6M
TOTAL FUNDING

Note: This total funding includes funding for Principal Investigators and Co-Principal Investigators only and excludes large infrastructure grants.

WELCOMING NEW FACULTY MEMBERS

Kitty Chan, Lecturer

Kitty Chan is a Clinical Specialist Radiation Therapist at the Princess Margaret Cancer Centre. Kitty's research interests are in brachytherapy and gynecology. She is also a Clinical Educator at The Michener Institute of Education at the University Health Network (UHN).

Tatiana Conrad, Lecturer

Dr. Tatiana Conrad is a Staff Radiation Oncologist at Stronach Regional Cancer Centre at Southlake Regional Health Centre, with cross-appointments to the Princess Margaret Cancer Centre and St. Michael's Hospital. Dr. Conrad specializes in breast and lung malignancies, and leads the development of a combined modality clinic for the management of patients with brain metastases at Southlake.

Lorraine Courneyea, Assistant Professor

Dr. Lorraine Courneyea is a Medical Physicist at the Odette Cancer Centre. She is the Physics Lead of the Lung Site group and is responsible for ensuring the technical implementation of clinical trials. She is the Rotation Supervisor for the medical physics imaging rotation, and the Co-Physics Lead of the Image Guidance Radiation Therapy group.

Matthew Follwell, Assistant Professor

Dr. Matthew Follwell is a Staff Radiation Oncologist and Chief of Oncology at the Simcoe Muskoka Regional Cancer Program in the Royal Victoria Regional Health Centre. His research interests are focused on gynecologic radiation oncology, and the role of advanced imaging techniques in the delivery of personalized, image-based radiotherapy.

Adam Gladwish, Assistant Professor

Dr. Adam Gladwish is a Staff Radiation Oncologist at the Simcoe Muskoka Regional Cancer Program in the Royal Victoria Regional Health Centre. His research has focused on advanced imaging and adaptive planning in gynecologic radiation oncology.

Vickie Kong, Lecturer

Vickie Kong is a Clinical Specialist Radiation Therapist at the Princess Margaret Cancer Centre. She is also a Clinical Educator at The Michener Institute of Education at UHN. Her research is focused on optimizing the treatment quality for genitourinary malignancies with the application of advanced planning and image guidance technology.

Brian Liszewski, Lecturer

Brian Liszewski is a Research Radiation Therapist and a Quality Assurance Coordinator at the Odette Cancer Centre. He is also a Clinical Educator at at The Michener Institute of Education at UHN.

Merrylee McGuffin, Lecturer

Merrylee McGuffin is a Research Radiation Therapist at the Odette Cancer Centre and a Practice-Based Researcher at the Sunnybrook Research Institute. Merrylee is also a Clinical Educator at The Michener Institute of Education at UHN.

Moti Raj Paudel, Assistant Professor

Dr. Moti Raj Paudel is a Medical Physicist at the Odette Cancer Centre. His research interests are in image-guided radiotherapy in brachytherapy, and external beam radiotherapy.

Tony Tadic, Assistant Professor

Dr. Tony Tadic is a Medical Physicist at the Princess Margaret Cancer Centre. He is also a Scientist at the Techna Institute at UHN. His research focus is on MRI-guided and adaptive radiotherapy for cervical cancer.

Julia Skliarenko, Lecturer

Dr. Julia Skliarenko is a Radiation Oncologist at the Simcoe Muskoka Regional Cancer Program in the Royal Victoria Regional Health Centre, and cross-appointed to the Princess Margaret Cancer Centre. Her research interests are in brachytherapy techniques for genitourinary and gynecologic malignancies.

Tiffany Tam, Lecturer

Dr. Tiffany Tam is a Radiation Oncologist at the Simcoe Muskoka Regional Cancer Program in the Royal Victoria Regional Health Centre. Her research focus is on central nervous system, breast and lung cancers, as well as stereotactic body radiation therapy.

William Tran, Assistant Professor

Dr. William Tran is a Radiation Therapist Clinician Scientist at the Odette Cancer Centre. His research focus is on early stage breast cancer, examining radiogenomic predictors of chemo-refractory and radio-refractory breast cancer, risk factors for local recurrence, distant metastasis, and survivorship.

Derek Tsang, Assistant Professor

Dr. Derek Tsang is a Staff Radiation Oncologist at the Princess Margaret Cancer Centre, cross-appointed to the Hospital for Sick Children. His research interests are in paediatric brain tumours, reducing the late effects of treatment, and re-irradiation.

Michael Velec, Assistant Professor

Dr. Michael Velec is a Radiation Therapist Clinician Scientist at the Princess Margaret Cancer Centre. His research interests are in adaptive radiation therapy, deformable image registration, dose accumulation, biomechanical models, and quantification of organ motion.

IN THE SPOTLIGHT

Rapid Expansion of the Simcoe Muskoka Regional Cancer Program

Wood, glass, stone, regional art work and an open airy reception are what you first see when you enter the Simcoe Muskoka Regional Cancer Centre (SMRCC); part of the Royal Victoria Regional Health Centre in Barrie. The centre officially opened in 2012 and is one of six academic cancer centres partnered with UTDRO. “You can practice really interesting, dynamic, and challenging radiation oncology in a setting like ours,” said Dr. Christiaan Stevens, UTDRO faculty member, and Clinical Director and Head of the Radiation Treatment Program at the SMRCC.

The centre is known for its sub-specialty in gynecologic oncology, but provides almost all forms of cancer treatments, except for paediatrics and head and neck malignancies. The most common cancers in this clinic are the “big four” of breast, prostate, lung and gastrointestinal malignancies; reflective of the aging population in the region. Palliative care is also a significant component of the radiation oncology program.

The SMRCC team consists of three gynecology surgical oncologists, eight radiation oncologists, 11 medical oncologists, four radiation physicists, 32 radiation therapists and four electronic staff. UTDRO faculty members have key positions at the centre. Dr. Matthew Follwell is the Chief of Oncology; other UTDRO faculty members include Drs. Adam Gladwish, Juhu Kamra, Julia Skliarenko, Tiffany Tam, and Fred Yoon.

Through the gynecology oncology program, SMRCC provides external beam radiation, but not brachytherapy. Patients requiring brachytherapy are referred to either the Odette Cancer Centre (OCC) or the Princess Margaret Cancer Centres (PM). Two of the SMRCC gynecology radiation oncologists spend one day a week at the PM practicing brachytherapy. This partnership allows the oncologists to be part of the PM team, while at the same time maintaining their skillset.

Medical Education

The SMRCC is one of the UTDRO teaching sites and usually has one or two UTDRO residents on their community rotation per year. Two recently hired radiation oncologists at SMRCC had completed their community rotation at SMRCC, and were inspired to seek permanent positions. “It has been a very positive experience for ourselves and for UTDRO — giving residents a chance to see a slightly different perspective on how radiation oncology is practiced, and that you can have an academic interest and practice in the community too,” said Christiaan.

From L to R: Jessica Conway, Fred Yoon, Tiffany Tam, Oluwabunmi Ogundimu, Juhu Kamra, Matthew Follwell, Adam Gladwish, Christiaan Stevens. Missing: Julia Skliarenko

You can practice really interesting, dynamic, and challenging radiation oncology in a setting like ours.

Research

Christiaan strongly believes that the potential for collaborative research through UTDRO and its academic hospital partners is outstanding, “When you think of the patient access just beyond Toronto, there are millions of people that if we collaborate in large research studies as a department, we could do things that very few other departments in the world could do.”

Every year, SMRCC participates in the Collaborative Research Seed Grant through UTDRO. So far, they have been awarded two grants, one focused on stereotactic ablative radiotherapy for renal tumors; the other on the implementation of a brachytherapy discharge education program.

SMRCC also participates in Canadian Clinical Trials with the National Cancer Institute of Canada, and the Ontario Cancer Oncology Group, and aspires to become a member of NRG Oncology.

Inevitably, the goal as a program is to provide exceptional person-centred care and I think we are doing a very good job of that.

Growth

SMRCC has been growing at an annualized rate of >10% per year. In their first year (2012), there were 1,300 new patient consultations; in 2017–18, there were 2,299 consultations. "The hospital has grown enormously. It has doubled its foot print in five years and we're in the process of doing a master plan to build even further," said Christiaan.

Several factors contribute to this rapid growth, including an aging population and lifestyle risk factors. Simcoe Muskoka has one of the highest incidence of chronic diseases in Ontario with 42% of residents suffering from a chronic condition.

	2016 2017	2017 2018	DELTA
NEW RADIATION CONSULTS (C1R)	1,803	2,299	28%
RADIATION TREATED CASES	1,355	1,559	15%
RADIATION TREATMENT VISITS	21,152	25,563	21%

New consultations, treated cases, and treatment visits at SMRCC from 2016 to 2018.

Challenges

The geographical region is disparate and patients have to travel long distances to receive radiotherapy. That combined with a significant number of low-income patients who cannot afford time off work or travel add to the challenges of treatment delivery.

There is also the demographics of a predominantly younger staff with young families. The department does not have the mix of veteran radiation oncologists with mid- and early-career oncologists.

Future Plans

There are two satellite chemotherapy sites, one in Huntsville and one in Orillia supervised by SMRCC. The centre would like to have the same capability in another smaller town, such as Collingwood.

The department will soon install a fourth linear accelerator that is fully stereotactic enabled with a Hexapod couch. The Hexapod couch should improve the precision in radiation therapy delivery for tumours located close to critical structures, such as the spinal cord. A new physicist plus a number of radiation therapists would need to be hired to support the new accelerator.

Amidst the rapid expansion, Christiaan describes what is most important to the centre and its future, "Inevitably, the goal as a program is to provide exceptional person-centred care and I think we are doing a very good job of that."

To learn more about SMRCC, visit rvh.on.ca/smrcp.

UTDRO WOMEN IN LEADERSHIP

This has been a momentous year for female advancement around the world. In light of this, UTDRO is highlighting the amazing achievements of three female faculty members in radiation medicine: Professor Rebecca Wong, and Assistant Professors, Young Lee and Colleen Dickie.

Being a woman in the field of radiation science brings its own set of challenges, and as many disciplines are seeing, the #metoo movement is an opportunity for them to be openly discussed.

"The #MeToo movement has highlighted the importance of seeing beyond cultural norms to recognize, speak up and strive for what is fair and just," said Dr. Rebecca Wong, the Vice Chair of Education at UTDRO. "Women are just one group. Ethnicity, gender, social economic status all put individuals into different advantaged or disadvantaged categories; that we need to speak up, advocate and stand up for others."

Rebecca first joined UTDRO in 1990 and served as the first PGY1 Coordinator at North York General Hospital, followed by stints as the Residency Research Director and Chair of Social Responsibility, Professionalism and Equity. Rebecca grew up in Hong Kong, but later studied in the United Kingdom before coming to Canada. She said stereotypes of women and Asians have at times affected how others see her.

"Being recognized as a leader, capable of making tough decisions while being passionate and caring, is much harder to do as a woman," said Rebecca.

The paucity of women in the field makes it all the more difficult to push back on those stereotypes. Dr. Young Lee is the Site Lead of the Sunnybrook Medical Physics Central Nervous System team. Only 25% of Medical Physicists in her department are women, according to Young, and that number is much less if the whole department is considered. Young said there are even fewer females in leadership positions.

Rebecca Wong, MBChB, FRCPC, MSc, Professor

Young is a board member and treasurer of the Canadian Organization of Medical Physicists. She has previously served as the Physics Lead of several clinical trials and programs. The biggest challenge she has faced as a female Radiation Physicist is the lack of mentorship because there are so few women in her field.

Being recognized as a leader, capable of making tough decisions while being passionate and caring, is much harder to do as a woman.

Colleen Dickie, MSc, MRT(T)(MR), Assistant Professor

"I think in our field, many of us have just had to plow through and have not had a lot of mentorship," said Young.

Colleen Dickie said she has not encountered that in the Radiation Medicine Program (RMP), where she is the Director of Operations, because there has been a strong history of female leaders. She has been in the RMP as a Radiation Therapist for over 20 years, during which time she has held several lead roles in radiation therapy, including Manager of Sarcoma Clinical Radiation Therapy Research, and Manager of Strategic Operations for the Radiation Therapy Program. Still, despite strong mentors, she has still struggled with maintaining a healthy work-life balance.

All three women were interested in the broad field, but set on radiation after witnessing its impact on patients. Colleen was inspired by the story of athlete Terry Fox, who lost his leg to osteosarcoma, and raised awareness and funds for cancer research. "Terry Fox reminds me that when life gets tough, you should be tougher."

Later when Colleen's aunt was diagnosed with cancer, she realized radiation therapy's potential to help patients. The patient focus remained with her when she watched her father's fight with cancer.

Rebecca had the same realization while completing her locums for medical school. "In the oncology (radiation) service … the different disciplines communicated with each other, and discussed the best ways to look after a patient," said Rebecca. "The consultants were passionate and caring, to their patients, to the nurses, even to medical students. That, I thought, is the type of doctor I want to be."

These early interests have continued to motivate them throughout their careers. Contributing to improving patient care and the lives of patients is Colleen's driving force.

I think in our field, many of us have just had to plow through and have not had a lot of mentorship.

I feel passionate about helping others and about educating younger people.

"Working in such a dynamic, innovative and world-renowned program that focuses on the needs of patients is the most exciting aspect of my work."

Young has been passionate about physics since high school and in college was drawn to becoming a Medical Physicist because of the ability to help others while solving problems.

"I get excited when I can get things to work, which includes daily processes such as treatment planning and unit problems, but also long-term challenges such as technique development for greater efficiency," said Young. "I feel passionate about helping others and about educating younger people."

She believes the best approach to teaching is recognizing students' individual needs and adjusting to accommodate. Her advice to twenty-somethings entering the field: "Appreciate what you learn and do not waste time. Put real effort into everything you do and try not to worry so much about the future."

Currently, females make up 40% of the total number of trainees in the Residency and Fellowship Programs at UDTRO; female faculty equate to 42%. As the number of women entering medical school continues to rise and even exceed those of men, there are still strides to be made to support the advancement of women in science, particularly in the field of physics, as Young described. The #MeToo movement draws attention to these differences. But now more than ever, females are being encouraged through special programs and outreach activities to pursue science from an early age, the results of which will become more apparent in the years to come.

Visit radonc.utoronto.ca to read the full Q&As with Rebecca, Young and Colleen.

Young Lee, PhD, MIPEM Assistant Professor

RTi3

Enabling Radiation Therapists to Collaborate, Network and Grow

In 2004, a group of nurses and radiation therapists from Princess Margaret Cancer Centre and the Odette Cancer Centre (then called Toronto-Bayview Regional Cancer Centre) decided to launch a conference with a focus on radiation medicine. In its beginning, the conference focused on continuing education and took place outside of Toronto with a program consisting of invited external speakers. The conference then moved downtown, and the radiation therapy community took over its leadership, an evolution strongly supported by the former UTDRO Chair, Dr. Mary Gospodarowicz and former UTDRO Vice Chair, Education, Dr. Pamela Catton. The conference was officially branded as the RTi3 Conference in 2010 — the three "i's" reflecting the pillars of *Inquire*, *Inspire* and *Innovate*.

"RTi3 has changed dramatically from its first iteration in 2004 to what it is today. It is very much a therapy-driven and therapy-focused conference," said Lisa Di Prospero, a former Chair of the RTi3 organizing committee. Lisa has been involved with the conference since its initial launch, and has participated as a co-chair or in a supporting role.

Another key individual behind the success of RTi3 is Kieng Tan, Academic Coordinator of the MRS program, and also a former RTi3 committee co-chair. Kieng describes the radiation therapy community as having a hunger for opportunities. "They're really wanting more out of their profession and wanting to get involved and find opportunities where they can showcase their knowledge and expertise." A conference dedicated to radiation therapists and run by radiation therapists seemed a natural evolution.

Mandate and Program

The RTi3 Conference today has a mandate to cultivate the practice and the profession of radiation therapy, and to support the growth and development of junior practitioners. The three pillars of *Inquire*, *Inspire* and *Innovate* guide the philosophy of the conference and shape its program. Each of the selected keynote speakers is a radiation therapist reflecting a particular pillar. There is always an inter-professional speaker, sought from outside of the profession, who demonstrates a skillset applicable to the field of radiation therapy.

From L to R: Kieng Tan, Lisa Di Prospero

Another key component is highlighting the work of the community cancer centres. "The co-chairs of the committee really make it a point to make sure all of the centres are showcased," said Lisa. The Practice Innovations segment of the program is geared for that purpose; profiling the selected centres' activities, and inspiring other practitioners to share their work.

The committee also incorporated an Innovation Snapshot, which is a rapid fire session highlighting innovations within centres that describe the issue, the solution, and its impact.

Uniqueness

The RTi3 Conference is one of five radiation therapy conferences offered internationally that is therapy-themed and research-based. It is the only such conference in Canada, with three main streams of practice innovation, clinical research and education research. There is not necessarily a defined theme or focus for each year; in fact, the conference is very open and inclusive of the therapists' work. One such idea emanated from Southlake Regional Health Centre: a *Congratulations you're finished your radiation therapy* card that was presented as a practice innovation. The response from patients was overwhelmingly positive. After learning about this innovation, the Odette Cancer Centre connected with Southlake and adopted the same practice.

The program is built upon therapists' research and scholarship including trainee research. Submitted abstracts undergo a rigorous double-blind peer-review by a selection committee to ensure the proffered program is clinically relevant and evidence-based. "We have no idea what the program is going to look like. It really does reflect the trends that are happening, so the therapists drive the program," said Lisa. "We specifically built it that way because we wanted to make sure it wasn't a continuing education conference. We wanted therapists to build their own knowledge and change their practice — that's been our motto." The abstracts presented are all published in the *Journal of Imaging and Radiation Sciences*, where Lisa is the Editor-in-Chief.

RTi3 Organizers

The RTi3 organizing committee is comprised of UTDRO faculty from all the academic hospital sites and partners. The co-chairs, historically, have been from the Odette and Princess Margaret Cancer Centres. The co-chairs for 2018 were Dr. Michael Velec and Brian Liszewski. In 2019, Michael Velec will return with a new co-chair, Laura D'Alimonte. Kieng and Lisa coach and mentor the new co-chairs, which is fulfilling another conference mandate of building leadership capacity within UTDRO. "Although we're not the face of the conference anymore, we will continue to be present behind the scene," said Kieng. "We will continue to be on the organizing committee and help to shape its future."

Looking Forward

The conference continues to grow each year. In 2018, there were over 150 delegates and 70 abstracts in oral and poster sessions. New faces continue appearing; particularly students and trainees, which is a great venue for them to connect to practitioners, network, and grow professionally. The conference continues to expand internationally with return delegates from New Zealand, the United Kingdom and Australia.

Kieng and Lisa have discussed the possibility of expanding the conference to the medical radiation sciences community and incorporating other disciplines such as Ultrasound, Magnetic Resonance, Radiological Technology and Nuclear Medicine. "I think when we're looking at research within the field of medical radiation sciences, there's a lot of opportunity for collaboration," said Kieng.

Lisa and Kieng were recipients of the 2015–2016 Colin Woolf Award for Long-Term Contribution to Continued Education (CE) from the University of Toronto's Faculty of Medicine for the RTi3 program. Their steadfast commitment and contributions to CE and continuing professional development has led to the development of a high quality program with global impact.

For more information about the conference, visit radonc.utoronto.ca/rti3.

From L to R: Brian Liszewski, Mike Velec

YEAR	DELEGATE	ABSTRACTS
2018	155	70
2017	140	73
2016	142	74
2015	131	81
2014	160	92
2013	173	76
*2012	N/A	N/A
2011	150	65
2010	114	39

RTi3 Conference number of delegates and abstracts since 2010 when it was officially named RTi3.

**2012: Conference not held due to International Society of Radiographers and Radiological Technologist World Congress.*

COLLABORATION ACROSS UTDRO

2018 Seed Grant Recipients

The recipients of this year's Collaborative Research Seed Grant from UTDRO are both seeking to decrease the harmful side effects of radiation treatments, while still maintaining the same quality of care.

A project led by Drs. Beibei Zhang and Charles Cho to reduce acute rectal toxicity for hypofractionated prostate radiotherapy received a seed grant for their research. The second seed grant project seeks to improve patient engagement and quality of care through the development and implementation of a brachytherapy discharge education program led by Drs. Jennifer Croke, Meredith Giuliani and Janet Papadakos.

The Collaborative Research Seed Grant was established in 2013 by Dr. Fei-Fei Liu to foster collaborations and research across the UTDRO cancer centres. To date, the department has awarded ten grants to teams comprised of two or more cancer centres across Southern Ontario.

Prostate cancer radiation therapy over the course of four to eight weeks has become the standard of care. However, studies have shown that this shorter treatment has the potential to increase short-term side effects. Charles and Beibei's project seeks to change that by reducing the amount of healthy tissue that receives radiation during treatment for prostate cancer patients. Ultimately, this will decrease the side effects of these treatments whilst maintaining care.

To do so, the researchers plan on using proper image guidance strategy to propose that reducing the planning target volume margin can maintain the effectiveness of the treatment. Drs. Peter Chung, Timothy Craig, Melanie Davidson, Louis Fenkell, Douglas Moseley, Vejitha Raveendran, Danny Vesprini, Jason Wong and Melanie Davidson are co-applicants of the project.

Their next step is to obtain Research Ethics Board approval, which is needed for every participating centre, as well as to establish research data sharing agreements among the sites. The pilot study will be conducted in three UTDRO cancer centres, but ultimately the team hopes the study will be able to bring in more collaborators.

From L to R: Charles Cho, Beibei Zhang, Timothy Craig

From L to R: Melanie Davidson, Danny Vesprini

From L to R: Janet Papadakos, Meredith Giuliani, Jennifer Croke

"The three participating UTDRO cancer centres represent one of the world's largest institutions for radiation treatments, with over 1,400 prostate cancer patients, including more than 600 intermediate risk patients undergoing radiation treatment annually," said co-lead investigator Beibei. "We hope that the planning target volume margin schema validated in this study will be readily applicable to the wider patient population, thereby benefiting other centres."

The second seed grant recipient project aims to decrease the long-term side effects often associated with brachytherapy — one of the major components of cervical cancer treatment. To do so, researchers are creating a brachytherapy discharge education program through e-learning to educate doctors on the side effects, particularly the sexual health implications that are often attached to the treatment.

Drs. Sarah Rauth and Julia Skliarenko, as well as Tina Papadakos and Anet Julius are co-applicants of the project. The study is being conducted through a partnership with the Princess Margaret Cancer Centre, the Simcoe Muskoka Regional Cancer Centre and Trillium Health Partners. Through the partnerships, researchers hope patients who at times receive treatment from multiple centres, will receive the same treatment regardless of where they are.

To do this, researchers believe there needs to be a better dialogue surrounding sexual health side effects.

"We know that sexual health and addressing issues regarding sexual health are under-reported and the negative side effects are under-represented," said co-lead investigator Jennifer. "We currently focus on bowel, bladder dysfunction, and other types of side effects, but sexual health is one area that has been difficult for patients and physicians to discuss.

Through the creation of online patient education materials *via* e-learning, which is standard in the GYN program, researchers hope patients and healthcare providers will better understand how to manage symptoms and side effects. They hope the resources will reduce the reluctance to discuss sexual health issues.

"If patients can self-manage some of their symptoms, that should ultimately impact on the patient experience, translate into improved interventions when necessary, along with a better quality of life," said Jennifer.

GAMMA KNIFE ICON

Enhancing Treatment for Brain Metastasis and Benign Tumours

Gamma Knife Frame

Radiation oncologists and neurosurgeons have traditionally used a surgically-placed metal frame when treating brain metastases and benign tumours, such as meningiomas and vestibular schwannomas, with high single doses of radiation. The frame is part of the highly sophisticated Leksell Gamma Knife, which uses 192 small individual beams targeting the tumours in a patient's brain. With the frame surgically attached to the patient's skull, the patient is rigidly immobilized on the treatment table, allowing the deposition of the high dose radiation to the tumour site.

A patient's typical day starts out in the early morning, when the neurosurgeon attaches the frame to the patient's head. The patient is then imaged with CT and MR scanners; the clinician designs a treatment plan based on these images, and the patient is treated later the same day.

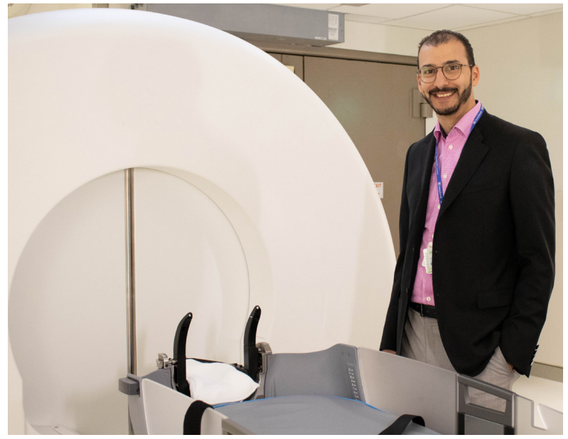
In most other types of radiation, the full dose is usually divided into a number of smaller fractions. "The frame limits the ability to treat lesions with more than one fraction of radiation," said Dr. David Shultz, Co-Director of the Brain Metastasis Clinic at Princess Margaret Cancer Centre. "With the Gamma Knife, we've always delivered single fraction radiotherapy because the frame is too uncomfortable to put on for more than one day."

When several patients are treated on the same day, it can also be quite demanding on the clinicians. "There is a lot of pressure to do the planning and preparation on the day when the patient has the frame on," said Dr. Hany Soliman, Radiation Oncologist at Sunnybrook's Odette Cancer Centre. "So it is resource intensive on that day and if something goes wrong you have to start the process over again."

To address some of these concerns and give clinicians more treatment options, a new technology was developed to enhance the Leksell Gamma Knife called the "ICON." The ICON technology would provide clinicians more options to tailor cancer treatment, while maximizing patient comfort, immobilization accuracy, optimizing patient scheduling and allow multi-day treatments.

Gamma Knife ICON Development

Dr. David Jaffray, Head of the Department of Medical Physics in the Radiation Medicine Program at Princess Margaret, had been working on integrating imaging systems into radiotherapy machines. His team took a few years to design an initial prototype, then shared the idea with Elekta and patented it. Elekta adopted the new technology, and collaborated with David J. and his team to create a prototype, which was ultimately approved by Health Canada. This technology has since then been commercialized by Elekta, and the first version of the Gamma Knife ICON was released three years ago. The development of the ICON at Princess Margaret took over five years, and involved a multi-disciplinary team consisting of radiation oncologists, physicists, therapists, machinists and engineers. Some of the key players included Physicists Drs. Mark Ruschin and Young-Bin Cho, post-doctoral Fellow Dr. Greg Bootsma, Radiation Oncologists Drs. Cynthia Menard and Caroline Chung, Radiation Therapist Winnie Li, Research Associates/Engineers Philip Komljenovic and Steve Ansell, and Machinist Rod Martin.


Hany Soliman

"When we worked with the company, we stepped them through what kind of changes would be possible to apply to the machine as the patient is having treatment," said David J. "I think this is one of the most interesting parts because you're making adjustments while the patient is on the table and to do that safely and with confidence requires a lot of technological innovation that we contributed to make sure that it works."

With the ICON technology, it is now possible to use a thermoplastic mask for immobilization, with the frame of reference generated through an integrated cone beam CT apparatus. These images are then registered to the planning image, through which, the machine localizes the tumour target in the brain, defined by the stereotactic coordinates from the frame.

"The CT scanner that is part of the ICON makes a kind of digital frame," said David J. "The digital frame with great precision and accuracy tracks the machine to the skull. All the imaging information is being registered back to the skull through computers."

There is also a threshold that the machine watches and if the patient moves beyond that threshold during treatment, the treatment will stop.

From L to R: David Shultz, David Jaffray

Benefits of the ICON

With the mask, clinicians can now treat patients over multiple days as opposed to only a single fraction. By integrating the imaging during treatment, different radiation courses can be explored. "For a tumour of a certain size, there is only so much radiation you can deliver in a single fraction before you are at high risk of causing injury," said David S. "But you can give a slightly smaller dose every day, so that the cumulative dose is quite significant while minimizing the risk of injury, allowing us to improve care by fractionating treatment when appropriate."

With the mask, clinicians can now treat patients over multiple days as opposed to only a single fraction.

Although the metal frame can still be used on the ICON, clinicians now have the option to more finely tailor the most suitable type of treatment for their patients. When using the mask-based approach, patients no longer need to come in early and wait all day while wearing this heavy metal frame. The ICON technology can also improve efficiency; thereby saving cost, and increase treatment availability.

The Odette Cancer Centre started using the ICON in June 2017, primarily treating brain metastases. The majority (80%) of patients are treated with the mask; 20% still treated with the frame. "This is a big step for us," said Hany. "It is not often that you get a machine that improves patient experience, outcomes and efficiency within a department. The number of patients that we have treated so far is a testament to the success of the ease of use of the ICON."

The Princess Margaret also started using the ICON in 2017, although there is still a preference for using the frame to treat smaller lesions. David S. opined that, "The ICON has the ability to deliver radiation using either a mask or a frame so it can do both, but many of our patients are still treated with a frame because we prefer using it for smaller lesions."

Odette Cancer Centre ICON team
Back row L to R: Lori Holden, Mark Ruschin, Arman Sarfehnia, Hany Soliman
Front row L to R: Sten Myrehaug, Brige Chugh, Young Lee, Collins Yeboah, Eric Tseng, Arjun Sahgal

It is not often that you get a machine that improves patient experience, outcomes and efficiency within a department.

Currently, there are five ICON machines in Canada, including the two at Odette and the Princess Margaret. The other three are located in Quebec, Winnipeg and Alberta. Both Odette and Princess Margaret receive referrals from other cancer centres, including Southlake, Credit Valley Hospital, Royal Victoria Hospital, as well as from other sites throughout Ontario and outside the province.

Future Use

David J. describes the precision of the ICON technology and how it allows for the exploration and improvement of alternative radiation treatments in the brain. Being able to calculate doses and integrate imaging within an adaptive paradigm that also incorporates a safety system is highly advantageous. "As we move into more online image guided systems, this paradigm of integrative imaging and adaptation in the room is going to become more common," said David J. "I think the ICON is a glimpse of what that's going to look like in the future, and having the imaging directly integrated is very attractive from a quality assurance perspective."

PAST UTDRO RESIDENTS AND FELLOWS

Where Are They Now?

Dr. Derek Tsang
Radiation Oncology Resident
2011–2016

"The best part was going through residency with a fantastic group of co-resident colleagues. We cared for patients together, studied together, and griped about exams together. Residency in Toronto also offered the unique opportunity to work at world-leading cancer centres alongside mentors who are global leaders in their field. This combination provided limitless opportunities for personal learning and nurturing academic excellence.

"I am currently a Staff Radiation Oncologist in the Radiation Medicine Program at the Princess Margaret Cancer Centre (PM). I am also an Associate Staff Physician in the Division of Haematology/Oncology at the Hospital for Sick Children. I treat malignant and benign adult primary brain tumours in the Pencer Brain Tumour Centre at the PM, and the Gamma Knife Centre at Toronto Western. I also treat paediatric brain tumours, solid cancers, and haematological malignancies at the Hospital for Sick Children."

Dr. Jonathan Klein
Radiation Oncology Resident
2010–2015

"UTDRO provides trainees with access to the latest technologies for radiation therapy and teaching from experts who not only use these technologies, but in many cases, have been instrumental in their development and validation. Being able to work on the cutting edge of radiation oncology gives UTDRO trainees an insight not only of the field's past and present, but also where it is likely to be going in the future.

"I am currently an attending Radiation Oncologist at Montefiore Medical Center in Bronx, New York and an Assistant Professor at Albert Einstein College of Medicine. I focus predominantly on breast cancer and lymphoma, but I also treat patients with all sites of cancer."

Dr. Sandra Meyers
Physics Resident
2015–2017

"I valued the exposure to a large department with very standardized, streamlined clinical operation and procedures, and a lot of new and exciting technology. I also really appreciated the applied physics course.

"I am working as an Assistant Professor in the Department of Radiation Medicine and Applied Sciences at the University of California, San Diego, and a Medical Physicist at Moores Cancer Center in La Jolla, California."

Dr. Dominique Fortin
Physics Resident
2014–2016

"At UTDRO, I received a rigorous training, and acquired experience with equipment and treatment techniques that are often not available at smaller centres. I very much enjoyed taking courses alongside radiation oncology residents and working on common projects with them. It was an excellent opportunity to create interdisciplinary collaboration, and learn from a large group of talented experts.

"I am working at the Saskatchewan Cancer Agency in Regina as a Medical Physicist, where I chair the head and neck interdisciplinary tumour group. I will move to Brisbane, Queensland in August 2018 to work as a Medical Physicist for the Icon Group, Australia's largest private provider of cancer care, which is expanding its operation to New Zealand, Singapore and China."

Dr. Max Dahele
Clinical Fellow
2005–2008

"Being immersed in radiation oncology gave me the chance to broaden my technical horizon, along with the opportunity to acquire and refine skills that would help me to better manage my future patients. There was a can-do attitude, fine colleagues, administrative staff, technologists, physicists, nurses, other fellows and radiation oncologists.

"For the last nine years, I have been a Radiation Oncologist at the Department of Radiation Oncology, VU University Medical Center (VUmc), in Amsterdam, Netherlands. My clinical practice is quite varied with specialization in lung cancer, endocrine tumours, spine and bone metastases, stereotactic body radiotherapy, complex palliation and re-irradiation."

ALUMNI FEATURE

Dr. Mei Ling Yap

Dr. Mei Ling Yap was a Clinical Fellow at UTDRO from 2011 to 2013. She now works as a Staff Specialist Radiation Oncologist at the Liverpool and Macarthur Cancer Therapy Centre in Sydney, Australia. When asked about her most valued experience at UTDRO Mei said, "The fabulous mentors who taught me career and life advice, as well as the opportunity to commence an academic career."

Mei's clinical interests are in lung and breast cancers; areas which she trained in during her fellowship. She is currently undertaking a health services research PhD with the University of New South Wales (NSW), Collaboration for Cancer Outcomes, Research and Evaluation (CCORE), and the NSW Cancer Council. Her project uses big data to investigate the socio-demographic factors, which lead to inequities in accessing radiotherapy in NSW, the largest state in Australia.

Another area where Mei is making a significant impact is in her role as Co-chair of APROSIG (Asia-Pacific Radiation Oncology Special Interest Group), a volunteer group of the Royal Australian and New Zealand College of Radiologists in the Faculty of Radiation Oncology. This group partners with low- and middle-income radiation oncology departments in the Asia-Pacific region to help support the development of safe, sustainable and effective radiotherapy.

For the past few years, APROSIG has partnered with the National Cancer Centre (NCC) in Phnom Penh, Cambodia, a comprehensive cancer centre, which has been a decade long project in the making. NCC started treating its first cancer patients with radiotherapy in April 2018. The primary approach that APROSIG has undertaken in working with their Cambodian partners is to provide in-country training of radiation therapists, medical physicists and radiation oncologists through Australasian volunteer trainers, who spend six- to 12-month secondments in Cambodia.

Mei describes how this year APROSIG hosted eight Cambodian oncology professionals in Sydney for a month each to undertake observership. "This project is very important to me as I believe that all cancer patients globally

should have access to radiotherapy," said Mei. "This centre will allow the chance for many Cambodian patients to have access to radiotherapy, which was not previously possible."

When asked about her most memorable moment at UTDRO, Mei describes taking part in the Ride to Conquer Cancer in 2012, "It kick started my addiction to cycling!"

This year, Mei received the inaugural UTDRO Alumni Award. This award was established to recognize excellence in professional creativity, education, research and global health in individuals following their graduation from UTDRO. The recipient of this year's award embodies the UTDRO values and has achieved impact on multiple fronts, which has in turn benefited the radiation medicine community at large, and ultimately our patients.

UTDRO FACULTY MEMBERS 2017–18 (JULY 1, 2017 TO JUNE 30, 2018)

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CHAMPIONS
($25,000 or more)

Department of Radiation Oncology

Elekta

Princess Margaret Cancer Centre

Royal Victoria Regional Health Centre

Southlake Regional Health Centre

Trillium Health Partners

Varian

PARTNERS
($5,000 to $24,999)

Pfizer Canada Incorporated

Apotex Incorporated

Bristol-Myers Squibb Pharmaceutical Group

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Abbvie

Amgen Oncology

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FRIENDS
(Up to $999)

Felicia Morrison

ANNUAL REPORT 2017–2018

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