

Queen's  
UNIVERSITY

DEPARTMENT OF  
ONCOLOGY  
2015 ANNUAL REPORT



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(Department of Oncology PI or Co-Investigator)

## WELCOME

### MESSAGE FROM THE DEPARTMENT HEAD, DR. ELIZABETH EISENHAUER



I am pleased to present the Department of Oncology Annual Report for 2015. New trainees, programs, research and clinical activity were the hallmarks of 2015.

The coming pages describe some of these and provide further evidence that our 2012 Vision and Strategy is coming to life.

*To accelerate improved cancer patient outcomes through:*

*Excellence and Innovation in Research*

*Excellence and Innovation in Education*

*Best evidence into Best Practice*

*and Leadership in Academic Oncology*

## 2015 THE YEAR IN NUMBERS

New cancer patients seen 4,559

Peer reviewed papers/manuscripts published or in press 111

Peer reviewed Grants held by Department of Oncology PIs 45  
(Totalling > 68M in awards)

Number of Postgraduate trainees, fellows 16

Book Chapters published 7

## WELCOME TO NEW FACULTY

### **Dr. Francisco (Paco) Vera Badillo MD, MSc**

Dr. Vera Badillo completed his medical training and internal medicine residency at The Monterrey Institute of Technology and Higher Education in Mexico. He completed his Medical Oncology Training at The Autonomous University of Nuevo Leon in Monterrey, Mexico. This was followed by a fellowship in Medical Oncology at The Princess Margaret Cancer Centre and a Masters in Science at The Institute of Medical Sciences – University of Toronto. He joined the Department of Oncology in September 2015, where his primary role is as a Senior Investigator in the Canadian Cancer Trials Group. Academic Interests also include exploration of prognostic and predictive biomarkers in breast and genitourinary cancer and evaluation of quality of reporting clinical trials in oncology. He participates in GU clinics in the Cancer program. Welcome Paco!

### **Dr. Heather Ostic MD, CCFP**

Dr. Ostic trained as a family physician at Queen's University, receiving her CCFP in 1997 and Palliative Care training in 1998. Heather has worked as a GP in Oncology (GPO) and has been an integral part of the cancer program for the past 17 years. In 2015, she officially became an Assistant Professor in the Department of Oncology. Welcome Heather!



## AWARDS, CELEBRATIONS, NEW AND NOTABLE

<b>Dr. David Berman</b>	named Director <u>Queen's</u> Cancer Research Institute
<b>Dr. Lara Best and Dr. Chris Booth</b>	nominated for PARO Excellence in clinical teaching award
<b>Dr. Michael Brundage</b>	awarded 2015 NCIC CTG Founder's Award – Dr. Joseph Pater Excellence in Clinical Trials Research
<b>Dr. Elizabeth Eisenhauer</b>	named Fellow of the Royal Society of Canada
<b>Dr. Chandra Joshi</b>	elected as a Fellow of the Canadian College of Physicists in Medicine
<b>Dr. Kadir Mullings</b>	PGY5 in Radiation Oncology, one of the two recipients of the Beatrice and Harold Cohen Prize in Medical Ethics
<b>Dr. Wendy Parulekar</b>	served as President, Society for Clinical Trials 2015-2016
<b>Dr. Michael Brundage</b>	was named President Elect of the Canadian Association of Radiation Oncologists
<b>Dr. Joe Pater</b>	received the Canadian Cancer Research Alliance Award for Outstanding Achievements in Cancer Research during the CCRC Nov 10, 2015

**....AND KGH Smoke Free as of Nov 1, 2015!**



**Royal Society of Canada winners, Dr. Eisenhauer, second from left.**

## DIVISIONAL REPORTS



**Dr. Conrad Falkson**

### **DIVISION OF RADIATION ONCOLOGY REPORT 2015**

#### **Division Head, Dr. Conrad Falkson**

The Division of Radiation Oncology within the Department of Oncology at Queen's University and Kingston General Hospital strives to ensure excellence in patient care and academic development. Located in the Cancer Centre of Southeastern Ontario, the Division of Radiation Oncology (DRO) is a local and regional resource, and is a major contributor clinically and academically to the Oncology Program.

There are 12 Radiation Oncologists within the Division, including 3 Clinician Scientists, who are also affiliated with Queen's Cancer Research Institute. Clinically, the DRO is a full service academic radiation treatment facility offering external beam treatment (megavoltage, orthovoltage and electrons), IMRT, VMAT, and stereotactic planning and delivery, as well as HDR brachytherapy and unsealed source therapy.

The Division has recently introduced a Deep Inspiration Breath Hold technique for left sided breast cancer treatment and continues to work toward implementing new technology and techniques in a systematic and structured fashion. The Division exemplifies collaboration and team work, and members work closely with other medical groups such as Surgery, Medical Oncology, and Palliative Care, as well as inter-professional collaboration with Supportive Care, Radiation Therapy and Medical Physics.

Academically, the Division has a strong Residency Training Program, with 8 residents in 2015 spanning a 5 year program. This training program is fully accredited by the RCPSC; candidates have been universally successful for several years at the Royal College exam, and all recent residents are currently working in Radiation Oncology. We participate in the training of residents from other disciplines through rotations and electives. The Division is active in Undergraduate teaching, with many observerships, electives and clerkship rotations throughout the year. The Division has a strong CPD program, as well as a focus on Patient Safety and Quality Assurance through initiatives such as Peer Review Audit. We also participate in research studies through QCRI, clinical trials through the Canadian Cancer Trials Group, OCOG and NRG, and several in-house studies.



**Dr. Tara Baetz**

## **DIVISION OF MEDICAL ONCOLOGY REPORT 2015**

### **Division Head, Dr. Tara Baetz**

The Division of Medical Oncology is made up of 15 full and part-time medical oncologists and hematologists who serve the needs of the Southeast LHIN. Two medical oncologists work primarily at the cancer clinic in the Belleville General Hospital (Quinte Healthcare) and the remainder have clinical responsibilities primarily at the Cancer Centre of Southeastern Ontario at Kingston General Hospital and Queen's University. Systemic therapy is delivered in these two sites as well as in satellite clinics in Lennox and Addington Hospital, Brockville General Hospital (and in 2016 – Perth Smith Falls Hospital). From a clinical perspective all solid tumour and disease sites are seen at the Cancer Centre of Southeastern Ontario and have associated multidisciplinary case conferences.

The Division is very active in phase II and III clinical trials and are active in developing local guidelines for patient care. We are a member of the Princess Margaret Hospital Phase II consortium of clinical trials. Our members are also active in population based research as well as translational research. Many of our members are active within the Cancer Research Institute. We have an active training program with both residents and fellows and participate in undergraduate medical training at Queen's University.

In addition, we have an active regional systemic program that is focusing on safe and quality systemic therapy closer to home. We work closely with our patient advisors to inform areas of improvement. In April of 2015 we had the fourth annual Regional Systemic Therapy Retreat which brings together health care providers in our region that deliver systemic therapy to discuss best practices.



**MEDICAL PHYSICS REPORT 2015**

**Division Head, Dr. John Schreiner**

The Medical Physics Department at the Kingston General Hospital (CCSEO) provides service to today’s population of southeast Ontario through its clinical programs and to the future population through its academic activities within the Department of Oncology.

The department’s mandate is to assure that each patient treated by the centre’s Radiation Oncology program receives the radiation dose as prescribed by a radiation oncologist. The members of the department work with other health care professionals in the Division of Radiation Oncology (DRO) to ensure that high standards of patient care are maintained within the radiation treatment arm of the Centre. Staff members provide this service via a range of activities from commissioning, testing, preventive maintenance, calibration and quality control of treatment units, through to dose calculation software quality control and treatment planning and dose calculation clinical support. In particular, medical physicists assist and advise in treatment planning and evaluate and approve each individual patient’s treatment plan.

The staffing in 2015 included 6.0 FTE medical physicists with one chief medical physicist, one senior medical physicist and four college certified medical physicists. The department also consisted of two medical physics residents, four technical staff (electronics, machinist, and physics technicians) one support staff (a shared administrative secretary) three physics graduate students and one post-doctoral fellow.



**Dr. John Schreiner**



[oncology.queensu.ca/divisions/divisions/medical\\_physics](http://oncology.queensu.ca/divisions/divisions/medical_physics)



## ACADEMIC PROFILE

Academically, the department trains the highly qualified physics and oncology personnel required in cancer clinics, and continues an active program of research focusing on developing advanced therapeutics in radiation oncology by improving techniques for radiation dose delivery and measurement (See Education and Research sections for details). All of the physicists currently hold adjunct academic appointments in the Department of Oncology (one full professor, one associate professor, four assistant professors); five have similar appointments in the Department of Physics, Engineering Physics and Astronomy.

## KEY ACCOMPLISHMENTS 2015

Much of the clinical effort of the department last year was to implement novel radiation therapy techniques that had been made possible through the recent acquisition of new radiation treatment equipment including our Varian TrueBeam linear accelerator. The physics program continued to expand image guided radiation treatment to our region, particularly extending volumetric modulated arc therapy (VMAT) to select appropriate lung and head and neck cancer patients. We paved the way to initiate advanced clinical trials with the Radiation Therapy Oncology Group (RTOG/NRG) by successfully credentialing our VMAT and IMRT clinical delivery through phantom irradiations under the Imaging and Radiation Oncology Core Quality Assurance Centre (IROC) in Houston. We also initiated Computed Tomography (CT) guidance of the interstitial high-dose-rate brachytherapy of breast cancers. A major development on our research front was an industry sponsored upgrade of the centre's Cobalt-60 research unit to a current BEST Theratronix Equinox unit capable of expanding our Cobalt research to modern treatment deliveries with multi-leaf collimators.

## PERSONAL ACHIEVEMENTS AND CONTRIBUTIONS

Chandra Joshi, Andrew Kerr, Greg Salomons, Xiangyang Mei and John Schreiner all serve on various Communities of Practice (CoPs) for Cancer Care Ontario. As noted earlier in this report, Chandra Joshi was elected to Fellowship in the Canadian College of Physicists in Medicine. Greg Salomons proposed, moderated, and presented at, the Treatment Planning System Commissioning and QA education session at the American Association of Physics in Medicine annual conference in July 2015 held in Anaheim California. He also presented, on behalf of the Canadian Partnership for Quality Radiotherapy, the CCO report from the CCO medical physics CoP on Chart Checking Practices at the Canadian Winter School on Quality and Safety (Kelowna, BC, February 2015). Andrew Kerr is a member of the Bylaws Committee for the newly formed Ontario Association of Medical Physicists. Finally, John Schreiner is Chair of the Canadian Organization of Medical Physicists' (COMP) Liaison with the Canadian Nuclear Safety Commission (CNSC) Sub-Committee, and is a member of COMP's Quality Assurance and Radiation Safety Advisory Committee (QARSAC). In October he presented a brief for COMP to the commissioners of the CNSC. He served on CCO's Capital Equipment Committee to the end of 2015.

## INTER-DEPARTMENTAL COLLABORATIONS

Oncology by its very nature is an interdisciplinary and transdisciplinary field. Not surprisingly therefore, strong clinical and academic collaborations have grown with faculty in different Departments within the Faculty of Health Sciences. *Some new activities in 2015 are highlighted:*



**Dr. Jill Dudebout**



**Dr. Annette Hay**

Greg Black

### MALIGNANT HEMATOLOGY DISEASE GROUP

**Inaugural Chair Dr. John Matthews; as of April 2016  
– Drs. Jill Dudebout and Annette Hay**

The Departments of Medicine and Oncology have forged strong bonds in the management of malignant hematological diseases through the creation of a Malignant Hematology Disease Site Group whose functions are similar to those of Divisions within the 2 departments. At this table all practitioners in the field of systemic management of malignant hematological conditions come together to streamline outpatient operations, including referral intake and new clinics, to coordinate inpatient care of patients, plan strategic initiatives and expand academic scholarship as well as develop common treatment guidelines.

This work, which formally began in 2015, has led to the development of a new rapid diagnosis clinic, the development of guidelines for management of DLBCL, new inpatient scheduling and a common outpatient referral process. With John's retirement in early 2016, leadership of the MHDSG has been assumed jointly by Drs. Annette Hay (Medicine) and Jill Dudebout (Oncology)



**Dr. Jay Engel**

## SURGICAL ONCOLOGY

### **Head Surgical Oncology, Dr. Jay Engel**

Surgical Oncology, led by Dr. Jay Engel, has seen the recruitment of several new members of Faculty in the past year who have been welcomed to the Department of Oncology and Cancer Program:

### **Dr. Elaine Fung – Head and Neck Cancer**

### **Dr. Sunil Patel – Surgical Oncology, GI Cancer**

### **Dr. Shaila Merchant – Surgical Oncology, Breast Cancer**

Each of these surgeons has now active clinical presence in the Cancer Centre and program and are building both clinical and academic bridges with the Department of Oncology.

## NEW THYROID NODULE CLINIC

A collaboration between the Departments of Medicine (Endocrinology), Oncology (Radiation Oncology) and Otolaryngology to develop a one-stop-shop clinic for patients with suspicious thyroid nodules began in September 2015. Patients have access to multidisciplinary opinions, biopsies and discussions of treatment options all in the same setting.

## DISEASE SITE GROUPS AND EVIDENCE-BASED STANDARDS

In 2015, an increasing number of Multidisciplinary Disease Site Groups developed guidelines for our disease management standards. Each new guideline is based on best evidence, is consistent with Cancer Care Ontario Disease Site Pathways, is reflective of the care provided at KGH/CCSEO and is developed and approved by the relevant Disease Site Group. Furthermore, all guidelines are then discussed and approved by the Disease Site Chairs Council for posting on the public Department of Oncology website [oncology.queensu.ca/clinical/disease\\_sites](http://oncology.queensu.ca/clinical/disease_sites)

This table lists guidelines approved as of June 2016:

	Disease Site Group	Guideline Description	Date Finalized
1	Breast	Breast Cancer	October 15, 2014
2	GI	Anal Canal Carcinoma	October 15, 2014
3	GI	Esophageal & GE Junction Cancer	May 18, 2016
4	GI	Gastric Cancer	May 18, 2016
5	GU	Renal Cell Carcinoma	June 25, 2014
6	GU	Testicular (Germ Cell)	June 25, 2014
7	GU	Urothelial Cancer of the Bladder	June 25, 2014
8	GU	Upper Tract Urothelial Carcinoma	January 21, 2015
9	Gyne	Vulvar Cancer (Invasive Squamous Cell)	May 20, 2015
10	Gyne	Ovarian Cancer	May 20, 2015
11	Lung	Non-Small Cell Lung Cancer	January 21, 2015
12	Lung	Small Cell Lung Cancer	January 21, 2015
13	Lymphoma	Aggressive B Cell Non-Hodgkin's Lymphoma	October 28, 2015
14	Melanoma	Cutaneous Melanoma	February 26, 2014
15	Sarcoma	Soft Tissue Sarcoma	May 20, 2015

2015 also saw the beginning of a process to determine how closely guidelines were followed; each DSG was asked to identify 2-3 metrics to evaluate that would track something felt to be important to patient outcomes, that perhaps might reflect appropriate resource utilization, and that could be feasibly assessed with standard data collection. This process will roll out in 2016.

Implementation of a well follow up care plan for patients treated for colorectal patients as an innovation in care delivery was commenced at CCSEO in 2015. The working group includes Drs. Biagi, Langley and Mahmud. An oral presentation on 'quality assurance and the lessons learned' was given at RSNA meeting in Nov. 2015 in Chicago by the resident, Dr. Jenny Jin, who won the 'Roentgen resident research award'.

# EDUCATION

## DEPARTMENT OF ONCOLOGY EDUCATION COMMITTEE

### Report from the Chair, Dr. Catherine de Metz

In November, 2015, the Department of Oncology hosted an Education Retreat focusing on the challenges of developing competency based medical education in post-graduate medicine, the Queen's initiative in Competency By Design (CBD). Leading the country, Queen's FHS Dean Reznick has a vision of being the first university to have all residency training programs participating in CBD by July 2017. At the retreat, we were pleased to welcome Dr. Kevin Imrie, President of the Royal College of Physicians and Surgeons of Canada, who gave us the Royal College perspective, and participated in the workshop. We also welcomed Dr. Damon Dagnone, Special Assistant to the Associate Dean, PGME, Faculty Lead CBME for Queen's University, who informed us of the opportunities to enhance our training in CBME.

All residency programs with Queen's are involved in this. Medical Oncology has been involved as a pilot site for the Royal College, with Radiation Oncology to be in a later cohort (see reports below). The work involved is two-fold – the first is to develop a strong training program using a competency based curriculum, and the second is to educate and train faculty in this process. Much of the work in the upcoming year will be on Faculty Development for CBME. Queen's University supports the Department with additional administrative support; programs have a Program Director and a CBME Lead, both of whom have protected time for this. This is the major educational initiative for the Department of Oncology for the next few years.

## **UNDERGRADUATE MEDICAL EDUCATION**

### **Department Lead, Dr. Mihaela Mates**

The academic year 2015-2016 saw a number of new developments in oncology curricular activities. It began with a comprehensive review of courses throughout the curriculum attempting to identify all cancer-related teachings with the goal of creating a thread linking all these teachings together and eliminate redundancies. This initiative was facilitated by Sheila Pinchin and Teresa Suart from the UGME office together with Dr. Lindsay Davidson.

The review led to the restructuring of the oncology course content (Terms 2B and C2) and structure (lectures were largely replaced by small group learning events) as well as the creation of new oncology online modules (4 modules completed to date) directly linked to the in class teaching. Oncology course content overlapping with other courses (e.g. family medicine, mechanisms of disease) was eliminated and more clinical content was introduced. To date, the evaluations for both oncology courses have been very favourable.

In addition, over the past academic year a number of new oncology related events were introduced. In C1 (pre-clerkship course) Oncology Emergencies are now formally taught by Oncology staff. In the fall of 2015 the curricular committee has approved the introduction of a mandatory expanded clinical skills Oncology/Palliative communication session for first year medical students that was successfully implemented in the spring of 2016. Finally, a new consolidative small group lecture comprising geriatrics, oncology and palliative care was introduced in term 2B. All these new initiatives received positive student evaluations.

Finally, Oncology faculty members are actively involved in other UGME activities such as clinical skills, research and admission committees, first patient program, OSCE examiners etc.

As for the future – plans are underway to complete disease related oncology modules for all oncology teachings throughout the curriculum. We will continue building collaborations with course directors for enhanced oncology teaching in other courses. The ultimate goal is to create an Oncology thread in MedTech that links all teachings together.

## **POSTGRADUATE MEDICAL EDUCATION – MEDICAL ONCOLOGY**

**Postgraduate Program Director, Dr. Nazik Hammad**

**CBME Lead, Dr. Anna Tomiak**

**Education Coordinator, Ms. Micheline McDonald**

### TRAINEES – PRESENT AND GRADUATING RESIDENTS

The Medical Oncology Training Program currently has 4 trainees in years PGY4-5. In July 2015, we welcomed two new PGY4 trainees, Dr. Ketan Ghate and Dr. Osama Souied. Our congratulations are extended to Drs. Negar Chooback and Dr. Anu Krishnamurthy who will be graduating from our program at the end of June 2016 and will sit the RCPSC Medical Oncology Exam in the Fall of 2016. Dr. Chooback will be starting a fellowship in Thoracic Oncology at the University of British Columbia, Vancouver, in August 2016. Dr. Krishnamurthy will be starting a 2-year fellowship in GI oncology at the University of Colorado, Denver, in August 2016. Looking to the future – we will soon welcome Drs. Joel Gray and Ambika Parmar in July 2016 as our two new PGY-4 residents.

### PROGRAM DEVELOPMENT

The Medical Oncology program is a 2-year subspecialty program. In the spring of 2014, the RCPSC selected medical oncology as one of two members of the first cohort rollout to implement competency-based medical education (CBME). Dr. Nazik Hammad and Dr. Anna Tomiak (CBME lead for our training program) attended several 2-3 day Royal College workshops in 2014, 2015 and 2016 in preparation for CBME implementation. The RCPSC's decision in December 2015 to slow down the full launch of CBME for early adopter programs aligned plans for a staged model for implementation and with the Queen's University initiative for CBME implementation across all training programs in July 2017. The RCPSC identified the new focus for 2016/17 on faculty engagement and development, and pilot testing of assessment strategies and tools. On this background, Drs. Hammad and Tomiak continued to work with both the national subspecialty committee and Queen's PGME on implementation strategies. The RCPSC workshop in May 2016 focused on finalizing EPA's and Required Training Experiences and defined the goals of the 2016 field test. Plans for a Medical Oncology Division retreat for faculty development and a national field test of six EPA's were well underway at the end of the academic year.

Both Dr. Tomiak and Dr. Hammad are active in the area of educational scholarship in CBME in collaboration with educators at the Queen's Office of Health Science Education in projects designed to assess CBME in medical oncology. Faculty at the Division of Medical Oncology at Queen's University are committed to the vision of the Royal College and Queen's University in implementing and ensuring the success of CBME in medical oncology.



**Residents' abstracts for 2015-2016:**

- 1-Ghate K, Burkes R, Brezden C, Zbuk K, Meyers B, Levine O, Spadafora S, Welch S, Ko J, Davdani S, Hopman W, Booth C, Goodwin R, Biagi J. Reasons for delay in time to initiation of adjuvant chemotherapy (TTAC) for colon cancer (CC): Analysis from six academic centers in Ontario, Canada. Abstract presented as poster in Poster Board: 28 2016 ASCO Annual Meeting; Chicago, Illinois, June 2016.
- 2-Chooback N, Baetz T, Francis J, Abu-Abed S, Feilotter H. Gynecological Melanoma: Clinical and Molecular Characterization, the Kingston Experience. Abstract accepted as poster at Society for Melanoma Research Congress, San Francisco, California, November 2015.

**POSTGRADUATE MEDICAL EDUCATION – RADIATION ONCOLOGY**

**Postgraduate Program Director, Dr. Maria Kalyvas**

**CBME Lead, Dr. Catherine de Metz**

**Education Coordinator, Ms. Micheline McDonald**

**TRAINEES – PRESENT AND GRADUATING RESIDENTS**

The Radiation Oncology program at Queen's welcomed Drs. Osbert Zalay and Samantha Sigurdson on July 1, 2015. They have spent a portion of the last year off service but in the coming year, will be spending much more time at the Cancer Centre. We are very happy to have them join the Radiation Oncology program. We are also delighted to welcome Nikitha Moideen from Dalhousie University and Michael Yan from Western University as our new PGY-1 residents. They will be joining us on July 1, 2016. Congratulations go to Drs. Martin Korzeniowski and Pierre-Yves McLaughlin who will be graduating from the program at the end of June 2016 and both of whom successfully passed their Royal College examinations in Radiation Oncology. Dr. Korzeniowski has accepted a fellowship in brachytherapy in Kelowna, British Columbia. Dr. McLaughlin will be starting a staff position in Gatineau, Quebec. We wish them both the very best for their future endeavours.



**Dr. Martin Korzeniowski**

WE ALSO CELEBRATE A NUMBER OF ACCOMPLISHMENTS BY THE RADIATION ONCOLOGY RESIDENTS:

Dr. McLaughlin was selected for the ABS/Elekta/Varian joint sponsored HDR Brachytherapy scholarship program. He was also selected for the best resident poster prize at CARO (Canadian Association of Radiation Oncology) Annual Scientific meeting in September 2015. Dr. Qu was awarded a Masters of Public Health from Harvard University. Dr. Jin was awarded a Masters of Science in Epidemiology from Harvard University. She also has been awarded the Conquer Cancer Foundation of ASCO Merit Award 2016 and the RSNA Roentgen Resident/ Fellow Research Award 2016.

CBME DEVELOPMENT:

Dr. de Metz and Dr. Kalyvas attended a 3 day workshop at the RCPSC in Ottawa to work with other program directors in Radiation Oncology from across the country on Competency Based Medical Education. This will certainly continue to be a focus for us over the next couple of years. We have been working on the first stage of the transition labeled Transition to Discipline which will be introduced to new PGY1 residents July 1, 2016.

**DEPARTMENT OF ONCOLOGY GRAND ROUNDS**

**Grand Rounds Lead, Dr. Elizabeth Eisenhauer  
Education Coordinator, Ms. Micheline McDonald**

For many years the Department has hosted a weekly hour-long Grand Round to provide continuing education to Faculty, trainees, students and researchers regarding new developments in Cancer medicine and research. In April 2015, the Department received new RCPSC self-accreditation for Grand Rounds, so that faculty can claim MOC Program Section 1: Accredited Group Learning credits as long as the accreditation standards are adhered to.

The Planning committee meets at least annually to review feedback from the year prior, and in the 2015-16 academic year, a number of local and national speakers were recruited to speak on topics as diverse as "From data fragmentation to Utopia" (Annette Hay – joint Grand Round with Medicine) to "Therapeutic targeting of medulloblastoma" (Sheila Singh – Stem Cell and Cancer Research Institute, McMaster University). A new on-line evaluation and attendance credit form was developed in order to ensure the RCPSC required evaluation was obtained (and linked with MOC accredited learning).

**RADIATION PHYSICS – EDUCATION**

In 2015 the physicists participated in the teaching of two courses (Physics 495 and Physics 858) introducing physics undergraduate, and physics and computer science graduate students, to Medical Physics.

Medical physicists contribute to the clinical teaching of the CCSEO's medical physics and radiation oncology residents and radiation therapists. In 2015, the medical physics staff participated in a component of clinical RT training providing radiation safety review and assisting in rotations through computerized treatment planning. In the Radiation Oncology Training Program, medical physicists participated in Academic Half Day sessions, planning rounds, and CME. A physicist participates in weekly tutorials with oncology residents covering both basic and clinical physics topics. Medical physics HQP training was directed to two medical physics residents, three physics graduate students (one PhD, two MSc), three co-operative research students and six undergraduate thesis students. One of our medical physics residents completed his CAMPEP accredited program in 2015.



**Medical Physics Students Chris Jeschel and Kevin Alexander**

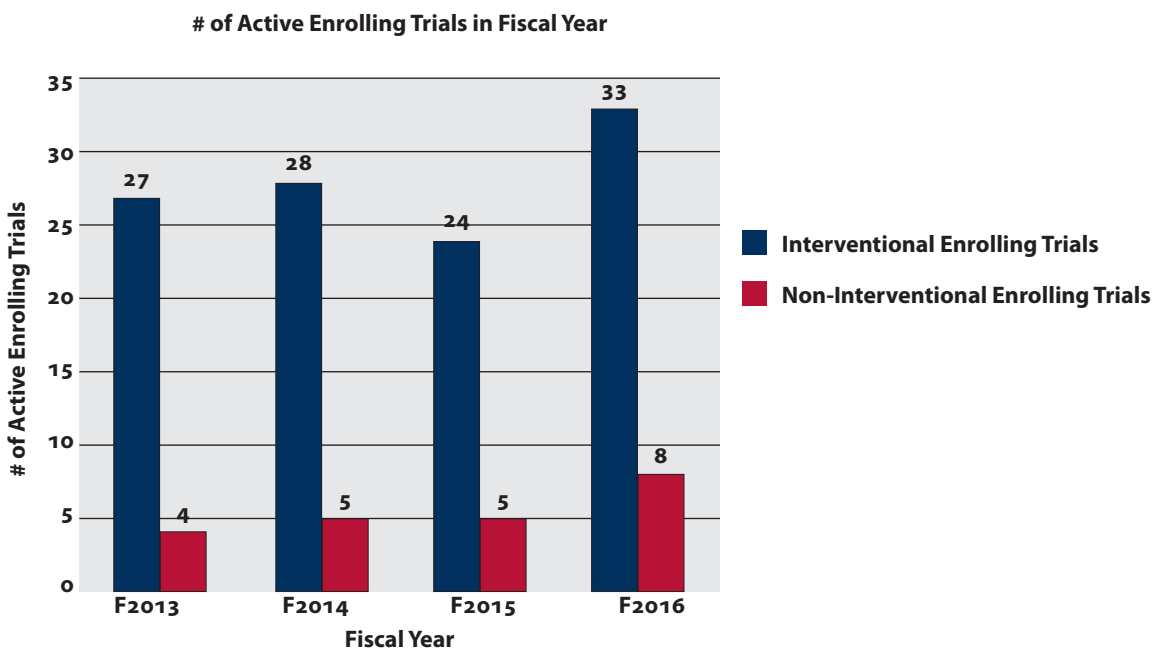
## RESEARCH

The Research Advisory Committee meets 3-4 times per year to monitor progress in achieving the 2014-2018 strategic plan priorities<sup>1</sup>, review emerging issues and initiatives. 2015 highlights organized by priority area of the plan are as follows:

### PATIENT-ORIENTED RESEARCH

#### CANCER CLINICAL TRIALS:

2015 was a very successful year in cancer clinical trials in the Department at CCSEO/Kingston General Hospital. Patient accrual to trials, numbers of trials open for patients (see Figure below), and innovation in clinical trials resulted in 235 patients participating in clinical trials/studies (114 enrolled on interventional studies, and 121 in non-interventional studies). Highlights include innovation in trial conduct – with the successful opening and accrual to pragmatic clinical trials; the exploration of the use of registry databases for outcomes follow-up; and the validation of patient related outcomes tools.



Patient accrual was high on several potentially high impact trials in common cancers – such as first line immunotherapy trials in lung cancer, and a randomized trial of exercise in colon cancer (CCTG's "Challenge" trial – CO.21). Furthermore, active engagement as an affiliated centre with the Canadian Cancer Trials Network has been very successful in helping to increase accrual. The combination of these factors has meant that the clinical trials research program has not only benefited patients through access to cutting edge research, but also has benefited future patients through development of methods to make clinical trials more efficient and more meaningful.

In 2015 a physician survey was conducted at CCSEO about potential barriers and interventions to improve the participation of oncologists in clinical trials.

<sup>1</sup> [oncology.queensu.ca/assets/DOCUMENTS/Dept\\_of\\_Oncology\\_Strategic\\_Research\\_Plan\\_2014-2018.pdf](http://oncology.queensu.ca/assets/DOCUMENTS/Dept_of_Oncology_Strategic_Research_Plan_2014-2018.pdf)



**Dr. Chris Booth**

**RESEARCH INTO PATIENT-CENTRED OUTCOMES AND INNOVATION IN CARE:**

In 2015 a number of faculty in the Department of Oncology began to work together on several research projects that seek to improve the patient experience at CCSEO/KGH. Research themes that will be explored by this working group include:

- 1) How to optimize communication and documentation of patient wishes/goals of care;
- 2) How to facilitate early access to palliative care; and
- 3) How to help patients make treatment decisions that require a trade-off between survival gain and side effect/quality of life.

Each of the emerging research teams will include a patient/family representative to provide input into study design and represent the patient’s voice in this collaborative research. In November 2015, we were honoured when B’Nai Brith Kingston hosted a large community event whose proceeds were donated to University Hospitals Kingston Foundation to facilitate patient-centred research at CCSEO.



**Dr. Jim Biagi**

**MOLECULAR ONCOLOGY RESEARCH:**

The 2015 Interdisciplinary Molecular Oncology grant competition supported interdisciplinary research teams to pursue clinically relevant molecular research utilizing biospecimens from the CCTG Tumour Tissue and Data Repository. Four applications were chosen for funding (see table below), at \$30,000-\$40,000 each. Overall, the four successful teams included 10 faculty members from Oncology, CBG, CCTG, Pathology and Molecular Medicine, Gynaecology, and Biomedical Sciences. The teams are pursuing novel translational research in breast, colorectal, and ovarian cancer. We expect these teams to build momentum and capacity and help nucleate more stable disease-site specific research teams.

**MOLECULAR ONCOLOGY GRANTEES AND PROJECT TITLES:**

Applicants	Project title
Madhuri Koti James Biagi	Role of CXCL10/CXCR3 signaling axis in modulation of tumor immune landscape and therapeutic response in high-grade serous epithelial ovarian cancer
Andrew Robinson Chris Mueller	GR promoter methylation as a biomarker of Tamoxifen efficacy in premenopausal women
Andrew Robinson Sonal Varma	ER beta expression and chemotherapy induced amenorrhea
Harriet Feilotter Scott Davey & Nazik Hammad	Expanded mutation testing in a cohort of colorectal cancer samples from CO.17

## PERFCT PROTOCOL IS LAUNCHED

In 2015, the so-called “PERFCT” (Patients Eligible to Receive Funded Cancer Testing) received REB approval with leadership from Drs. Penny Bradbury (now at U of T but continuing as an Adjunct member of the Department of Oncology at Queen’s), Harriet Feilotter (Pathology and Molecular Medicine), Andrew Robinson, Tara Baetz and Jim Biagi. This unique project allows additional molecular/mutational analyses of samples from consenting patients who are undergoing standard mutation testing for treatment decisions. The additional information that will be available (which will include data generated that span ~50 genes and more than 3000 known variants with a clear impact in tumorigenesis) will be available for research projects once sufficient cases have been accrued. From April-June 2016 90 patients have been enrolled – so it is hoped that with this accrual rate close to 1000 cases will be available within 3 years. Discussions are also ongoing with the PMCC and their OCTANE protocol to determine if there is an opportunity for collaboration.



**Dr. Michael Brundage**

Greg Black

## POPULATION AND HEALTH SERVICES RESEARCH

The strategic priority for this research area was to facilitate research by Department faculty who have an interest in conducting health services or clinical research but who are not full time clinician scientists. An important enabler for this to happen which was identified early on was to find funding for infrastructure support which could be embedded within the Division of Cancer Care and Epidemiology (CCE) (QCRI) that would allow such collaborations to grow.

To deliver on this priority, CCE has been successful in obtaining a 3-year grant from University Hospitals Kingston which will support research led by faculty (primary or cross-appointments to the Department of Oncology) who have demonstrated interest in health-services research in collaboration with the experienced CCE research team. The research model is focused on applied projects that capitalize on available linked clinical and administrative databases housed at the Division of Cancer Care and Epidemiology, in addition to available mentoring from clinician-scientist researchers. The funds support a part-time biostatistician and statistics analytical programmer who can assist physicians in conducting this research. This new research opportunity is designed to provide guidance and infrastructure support of small projects that can answer limited-scope questions or that can provide pilot data leading to competitive funding applications for larger projects. The collaborative model fosters the conduct of projects that provide new knowledge leading to improved quality of patient care, improved health services, and improved patient outcomes both locally at KGH, in other Ontario hospitals, and in other jurisdictions. It is hoped that within the next year 2-3 new projects will commence as a result.

## MEDICAL PHYSICS RESEARCH

Medical Physics Research: Radiation physics research has been a strong focus of the. In 2015 the Medical Physics Department at KGH research effort was advanced by 3.5 graduate students, 2 medical physics residents, a post-doctoral fellow and various summer students working on projects in clinical implementation of three dimensional dosimetry, cobalt radiotherapy advancement, clinical brachytherapy and investigation of the potential for a pacemaker with dose measuring capabilities.

Monte Carlo modelling of the Cobalt-60 (Co-60) beams has been taken up by Ms. Ingrid Lai to model a Cobalt Total Body Irradiator; her thesis will be submitted this summer. Mr. Chris Jechel used Cobalt CT imaging to investigate CT image integrity when metal inserts are in volumes of interest; this work may extend applications to industrial and orthopaedic interests. Thomas Bulenga is working on treatment planning options for Cobalt delivery.

The success of our cobalt research was acknowledged by our industrial partner BEST Theratronics who upgraded our Theratronics T780 to a current Equinox system in the fall. We have started commissioning and modelling the new unit.

The development of new three dimensional dosimeter materials and measurement tools continued with Dr. Kim McAuley in Chemical Engineering, with Modus Medical in London Ontario and in collaboration with SLICER-RT researchers at Queen's University (in the PERK lab under Dr. Gabor Fichtinger). The gel dosimetry analysis tools developed by PhD students Kevin Alexander and Csaba Pinter have provided an open source dosimetry analysis tool that has now been adopted by researchers and clinics worldwide. Current efforts are to extended SLICER-RT to film dosimetry applications. The collaboration with the PERK researchers also enabled investigations for novel brachytherapy treatment planning tools.



(L to R) Chris Jechel, Chris Peters, Dr. Chandra Joshi



Greg Black

**Dr. David Berman**

## **QUEEN'S CANCER RESEARCH INSTITUTE (QCRI) UPDATE**

### **Director, Dr. David Berman**

The Department of Oncology shares Faculty and has extensive research collaborations with the QCRI – which in January 2015 appointed Dr. David Berman as its new Director. He has kindly provided an update of QCRI for this report:

The Queen's Cancer Research Institute houses 3 divisions, each with a distinct research focus. The Cancer Biology and Genetics (CBG) division uses cell and molecular biology techniques to devise new ways to understand, detect, characterize, and fight cancer. The Canadian Cancer Trials Group (CCTG) tests the most promising new cancer management strategies in human patients, and the Cancer Care and Epidemiology (CCE) division measures access to care as well as impact and quality of care for cancer patients across Ontario and the world.

Queen's Oncology faculty members play critical roles at QCRI – as members of the three divisions and/or as key collaborators. These roles are probably most apparent when looking at publications coauthored by primary-appointed Oncology faculty and other members of QCRI. Not surprisingly, 90% of these publications (at least 12 from 2015) involve Clinician scientists with protected time for research. Drs. Mackillop, Booth, and Brundage lead the pack in this area. From the perspective of nurturing academic growth in the Department and the Institute, protected time for research has emerged as a rare and valuable commodity among Oncology department members.

Upon taking on the role of QCRI Director in early 2015, Dr. Berman's first priority was to further strengthen cancer research teams that span departments and QCRI divisions. This goal benefits basic scientists by linking mechanistic research questions to important clinical problems, and benefit clinical investigators by providing them with a more powerful platform to pursue their most pressing research questions. As teams grow and develop a track record of accomplishments, they become empowered to address increasingly ambitious, sophisticated, and important research questions, and in so doing, become increasingly successful in competitions for research funding. To accomplish this goal, two strategies are being pursued:

1. Via the Molecular Oncology grant competition (see above), offer seed funding to crossdepartmental collaborative research teams
2. Nurture the development of these teams into robust research teams defined by disease site.



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## 2015 PEER-REVIEWED GRANTS WITH DEPARTMENT OF ONCOLOGY PI OR CO-I

Note: External Peer-reviewed grants only (not included: clinical trial per case revenue from cooperative groups)

**Principal Investigator** Booth CM  
**Sponsor** CFI-IOF  
**Total Award** \$34,455  
**Title of Grant** Translating New Anti-Cancer Treatments into Population Benefit: A Provincial Chemotherapy and Outcomes Database

**Principal Investigator** Booth CM  
**Sponsor** CIHR  
**Total Award** \$500,000  
**Title of Grant** Canada Research Chair in Population Cancer Care

**Principal Investigator** Booth CM  
**Sponsor** Canadian Institute for Health Research (CIHR)  
**Total Award** \$10,000  
**Title of Grant** (KGH) towards Optimal Multidisciplinary Management of Bladder Cancer: Referral Patterns in the "Real World"

**Principal Investigator** Booth CM  
**Sponsor** Queen's University Dept of Oncology/UHKF  
**Total Award** \$40,000  
**Title of Grant** CRC Mets Project – Oncology

**Principal Investigator** Booth CM  
**Coinvestigators** Feldman-Stewart D; French S; Siemens R  
**Sponsor** CCSRI-Knowledge to Action  
**Total Award** \$99,344  
**Title of Grant** Understanding physician knowledge attitudes and behaviour: Towards improving utilization rates of peri-operative chemotherapy for bladder Cancer

**Principal Investigator** Booth CM  
**Coinvestigators** Biagi James J; Hanna T; Krzyzanowska M; Mackillop WJ; Nanji S; Peng U P  
**Sponsor** Canadian Institute for Health Research (CIHR)  
**Total Award** \$218,100  
**Title of Grant** Optimizing the Use of Adjuvant Chemotherapy for Colon Cancer: A Population-Based Study of Practice and Outcomes

**Principal Investigator** Plante M  
**Coinvestigators** Fyles, T, Craighead P, Stuart G, Tu D, Brundage MD; Brotto L, Kwon J, Mittman N, Ferguson S, O'Callaghan CJ  
**Sponsor** CIHR  
**Total Award** \$2,203,332  
**Title of Grant** Randomized Trial Comparing Radial Hysterectomy and Pelvic Node Dissection vs Simple Hysterectomy and Pelvic Node Dissection in Patients with Low Risk Cervical Cancer Defined as Lesions Measuring Less Than 2 cm with Less than 50% Stromal Invasion

**Principal Investigator** Brundage MD  
**Coinvestigators** Mackillop WJ; Groome P; Booth C; et al  
**Sponsor** Cancer Care Ontario  
**Total Award** \$1,182,500  
**Title of Grant** Cancer Care & Epidemiology

**Principal Investigator** Brundage MD  
**Coinvestigators** Foxcroft S; Halperin R; McGowan T; Warde P; Parliament M; Milosevic M.  
**Sponsor** Canadian Partnership Against Cancer  
**Total Award** \$746,120  
**Title of Grant** Peer Review in Radiotherapy: A National Quality Improvement Initiative

**Principal Investigator** **Brundage MD**  
**Coinvestigators** Jin J; **Hanna T**  
**Sponsor** AbbVie CARO Uro-Oncologic Radiation Awards (ACURA)  
**Total Award** \$28,293  
**Title of Grant** The Utilization of Adjuvant and Salvage Radiotherapy Following Radical Prostatectomy in Ontario

**Principal Investigator** Cairncross, G  
**Coinvestigators** Al-Awar R; Chan J ; Kaplan D ; Marra, M; Mason W; Moffat J; Moran M; Robbins S; Senger D; **Seymour L**; Singh S; Weiss S; Wrana J  
**Sponsor** Terry Fox Research Institute  
**Total Award** \$3,094,452  
**Title of Grant** Modeling and Therapeutic Targeting of the Clinical and Genetic Diversity of Glioblastoma

**Principal Investigator** **Dancey J**  
**Sponsor** British Columbia Cancer Agency  
**Total Award** \$615,475  
**Title of Grant** Canadian Cancer Clinical Trials Network

**Principal Investigator** **Dancey J**  
**Sponsor** Ontario Institute for Cancer Research (OICR)  
**Total Award** \$2,437,500  
**Title of Grant** Canadian Cancer Clinical Trials Network

**Principal Investigator** **Dancey J**  
**Sponsor** New Brunswick Health Research Foundation  
**Total Award** \$178,000  
**Title of Grant** Canadian Cancer Clinical Trials Network

**Principal Investigator** **Dancey J**  
**Sponsor** Alberta Cancer Foundation  
**Total Award** \$463,500  
**Title of Grant** Canadian Cancer Clinical Trials Network

**Principal Investigator** **Dancey J**  
**Sponsor** Canadian Breast Cancer Foundation  
**Total Award** \$500,000  
**Title of Grant** Canadian Cancer Clinical Trials Network

**Principal Investigator** **Dancey J**  
**Sponsor** Canadian Partnership Against Cancer  
**Total Awarded** \$1,300,000  
**Title of Grant** Canadian Cancer Clinical Trials Network

**Principal Investigator** **Dancey J**  
**Sponsor** Nova Scotia Health Research Foundation  
**Total Award** \$62,500  
**Title of Grant** Canadian Cancer Clinical Trials Network

**Principal Investigator** **Dancey J**  
**Sponsor** Canadian Foundation for Innovation  
**Total Award** \$3,831,564  
**Title of Grant** NCIC Clinical Trials Group Central Operations and Statistics Office at Queen's University

**Principal Investigator** **Dancey J**  
**Coinvestigators** **Bradbury P**; Bramwell V; **Brundage M**; Chapman J-A; Chen B; Chi K; Cleary L; Couban S; Crump M; Dancey J; Ding K; Fung Kee Fung M; Gelmon K Sponsor NIH – US National Cancer Institute; Goss G; Hirte H;  
**Total Award** \$15,115,287  
**Title of Grant** NCIC Clinical Trials Group – Canadian Collaborating Clinical Trials Network

**Principal Investigator** **Dancey J**  
**Sponsor** Ontario Institute for Cancer Research (OICR)  
**Total Award** \$490,000  
**Title of Grant** Ontario Institute for Cancer Research (OICR) Scientist Award

**2015 PEER-REVIEWED GRANTS  
WITH DEPARTMENT OF ONCOLOGY PI OR CO-I**

**Principal Investigator** **Dancey J**  
**Coinvestigators** Meyer R; **Eisenhauer EA; Seymour L; Parulekar W**; O'Callaghan C; Tu D; Ding K; Chapman J; Chen B.; Squire J; **Dancey J**; Bradbury P; **Brundage MD**; et al  
**Sponsor** Canadian Cancer Society Research Institute  
**Total Award** \$35,821,331  
**Title of Grant** NCIC Clinical Trials Group Core Program Grant

**Principal Investigator** de Vries M;  
**Coinvestigators** Stiggelbout a; Kil P; Pelger R; van Bodegom-Vos L; Zeelenberg M; **Feldman-Stewart D**  
**Sponsor** CZ Innovation Fund – the Netherlands  
**Total Award** 169,400 Euros  
**Title of Grant** De Patient centraal bij de behandelkeuze voor prostaatcancer (JIPPA – Joint Implementation Prostate cancer Patient-centred care)

**Principal Investigator** **Engel J**  
**Coinvestigators** Rudan J; Fichtinger G  
**Sponsor** AHSC AFP Innovation Fund; SEAMO  
**Total Award** \$91,000  
**Title of Grant** Computer-Assisted Breast Conserving Surgery – Proof of Concept Study on Non Palpable Tumors

**Principal Investigator** **Engel J**  
**Coinvestigators** Rudan J; Fichtinger G  
**Sponsor** Department of Surgery's Departmental Development and Innovation Fund. Department Total of Surgery  
**Award** \$20,000  
**Title of Grant** Breast Tumor resection under real time electromagnetic navigation.

**Principal Investigator** **Feldman-Stewart D**  
**Coinvestigators** Bender J; **Brundage M**; Chin J; Davison J; Kazanjian A; Kennedy B; Molloy S; Tong C  
**Sponsor** Prostate Cancer Canada and Movember  
**Total Award** \$167,640  
**Title of Grant** ASAP Network Decision Support Tool

**Principal Investigator** Groome P  
**Coinvestigators** **Booth CM**  
**Sponsor** CIHR  
**Total Award** \$413,621  
**Title of Grant** Understanding Diagnostic Episodes of Care in Patients with Early Versus Late Cancers

**Principal Investigator** Grunfeld E  
**Coinvestigators** Aubmin M; Brouwers M; Carroll J; De Angelis C; Earle C; **Eisenhauer EA**; Fillion L; Groome P; et al  
**Sponsor** Canadian Institutes of Health Research  
**Total Award** \$2,476,364  
**Title of Grant** Canadian Team to Improve Community Based Cancer Care along the Continuum (CanIMPACT)

**Principal Investigator** **Hammad N; Tomiak A**  
**Sponsor** Postgraduate Medical Education  
**Total Award** \$10,000  
**Title of Grant** Special Purpose Grant awarded by Postgraduate Medical Education of 10,000

**Principal Investigator** **Hanna T**  
**Coinvestigators** **Eisenhauer EA**; McKay D; Petrella T; Earle C; Tron V; Peng P; **Booth CM, Baetz T**  
**Sponsor** CIHR  
**Total Award** \$360,993  
**Title of Grant** A population study of the Toxicity and Effectiveness of High Dose Interferon for High Risk Melanoma

**Principal Investigator** **Hanna T**  
**Coinvestigators** **Booth CM**; Earle C; Petrella T;  
**Eisenhauer E**; McKay D; **Baetz T**;  
 Peng P  
**Sponsor** Ontario Institute for Cancer  
 Research  
**Total Award** \$24,086  
**Title of Grant** A population-based study of  
 adjuvant high-dose interferon use  
 for high-risk melanoma in Ontario

**Principal Investigator** **Hanna T**  
**Sponsor** Ontario Institute of Cancer  
 Research  
**Total Award** \$350,000  
**Title of Grant** OICR Clinician Scientist Award

**Principal Investigator** **Hanna T**  
**Coinvestigators** **Eisenhauer EA**; Petrella T M;  
**Baetz T**; **Booth CM**; et al  
**Sponsor** CTAQ Endowment Fund  
**Total Award** \$20,000  
**Title of Grant** Optimizing High-Dose Interferon  
 Use for Melanoma in Ontario:  
 A Population-Based study

**Principal Investigator** **Hanna T**  
**Coinvestigators** Sullivan R (Kings Health Partners  
 Institute of Cancer Policy);  
 Bourque JM  
**Sponsor** CARO and Elekta  
**Total Award** \$75,000  
**Title of Grant** Staying on target: Optimizing  
 Utilization of High- Precision  
 Radiotherapy

**Principal Investigator** **Hurlbut D**  
**Co-Investigator** Berman D; Cheng J; Feilotter H;  
**Hammad N**; Nichol C;  
 Ramjeesingh R  
**Sponsor** AFP Innovation Research Fund  
**Total Award** \$22,000  
**Title of Grant** Colorectal Cancer Research  
 Program of Southeastern Ontario:  
 Elucidating the  
 pharmacogenomics interactions  
 between colorectal cancer (CRC),  
 diabetes mellitus and metformin  
 use as a means to developing  
 predictive and prognostic  
 biomarkers for clinical outcomes  
 and improved patient therapies.

**Principal Investigator** **Joshi C**; **Shenfield C**  
**Coinvestigators** Fichtinger G  
**Sponsor** The Prostate Cancer Fight  
 Foundation – Kingston – Quinte  
 Chapter  
**Total Award** \$32,000  
**Title of Grant** Electromagnetic catheter tracking  
 approach for accurate  
 reconstruction of prostate  
 brachytherapy implant geometry  
 using phantom studies

**Principal Investigator** **Kalyvas M**  
**Sponsor** Postgraduate Medical Education  
**Total Award** \$10,000  
**Title of Grant** Special Purpose Grant awarded by  
 Postgraduate Medical Education of  
 10,000

**Principal Investigator** **Kerr AT**; **Redfearn D**; **de Metz C**  
**Sponsor** Queen's University Department of  
 Oncology Kingston General  
 Hospital Cancer Research Fund –  
 Interdisciplinary Cancer Total  
 Research Grant 2013  
**Award** \$39,805  
**Title of Grant** Development of a hybrid  
 pacemaker-dosimeter

**Principal Investigator** Leveridge, M  
**Coinvestigators** **Booth C**; **Mackillop WJ**;  
 Siemens DR  
**Sponsor** AFP Innovation Research Fund  
**Total Award** \$36,000  
**Title of Grant** Management and Outcomes of  
 Testicular Cancer in Routine  
 Clinical Practice: A population-  
 Based Outcomes Study

**Principal Investigator** Liu G  
**Co-Investigator** **Brundage MD**; Howell D; Green E.  
**Sponsor** Cancer Care Ontario  
**Total Award** \$1,182,500  
**Title of Grant** On-PROST: Ontario Patient  
 Reported Outcomes of Symptoms  
 and Toxicity

**2015 PEER-REVIEWED GRANTS  
WITH DEPARTMENT OF ONCOLOGY PI OR CO-I**

**Principal Investigator** Mackillop WJ  
**Coinvestigators** Zhang-Salomons J; **Booth CM**; C Sawka; Warde P; Dudgeon D; Trudeau M; Irish J  
**Sponsor** Cancer Care Ontario  
**Total Award** \$104,840  
**Title of Grant** CCO: Develop and Report on Quality Indicators of Cancer Care in Ontario

**Principal Investigator** **Mates M; Boag A; Feilotter H**  
**Sponsor** Queen's University Department of Oncology Kingston General Hospital Cancer Research Fund - Interdisciplinary Cancer Research Grant 2013  
**Total Award** \$20,000  
**Title of Grant** Novel gene sequencing technique for molecular profiling of non-small cell lung cancer

**Principal Investigator** Milosevic M  
**Coinvestigators** Bissonnette JP; Brown E; **Brundage MD**; Dunscombe P; French J; Gillan C; Parliament M;  
**Sponsor** SCCahnealdlaia Jn Partnership Against Cancer (CPAC)  
**Total Award** \$1,186,110  
**Title of Grant** Canadian Partnership for Quality in Radiotherapy

**Principal Investigator** Mueller C  
**Co-Investigators** **Robinson A**  
**Sponsor** Queen's University Department of Oncology UHKF Interdisciplinary Cancer Research Grant 2015  
**Total Award** \$40,000  
**Title of Grant** (KGH) GR Promoter Methylation as a Biomarker of Tamoxifen Efficacy in Pre-Menopausal Women

**Principal Investigator** Mulligan L  
**Co-Investigator** Aronson K; Baetz T; **Booth CM**; Chapman JW; Chen BE; Chen D; Cole SP; Craig AW; Davey SK; **Eisenhauer EA**; Elliott BE; Feilotter HE; **Feldman-Stewart D**; Graham CH; Greer PA; Groome PA; Hal; SF; Hurlbut DJ; Jia Z; Jones G; King WD; Lebrun DP; **Mackillop WJ**; Massey TE; Meyer RM; Mueller CR; Nicol CJ; Petkovich M; Raptis LH; Schreiner LJ; **Seymour L**; Shepherd LE; Siemens R; Smith SP; Squire JA; Tron V; Tu D; Walker HD; Winn LM; Yang X  
**Sponsor** CIHR  
**Total Award** \$1,650,000  
**Title of Grant** The Terry Fox Foundation Training Program in Transdisciplinary Cancer Research at CIHR

**Principal Investigator** Oza A  
**Co-Investigators** **Baetz T** (Kingston Site)  
**Sponsors** National Cancer Institute (US)  
**Total Award** \$9,000,000  
**Title of Grant** Princess Margaret Hospital Phase II Consortium- Early Therapeutics Development with Phase II Emphasis

**Principal Investigator** **Parulekar W**  
**Sponsor** Foundation du CHU  
**Total Award** \$137,601  
**Title of Grant** Randomized Phase II Feasibility Trial of Image Guided External Beam Radiotherapy With or Without High Dose Rate Brachytherapy Boost in men with Intermediate Risk Prostate Cancer (PR.15)

**Principal Investigator** **Parulekar W**  
**Coinvestigators** Shepherd L; Chen B; Goodwin P;  
Pritchard K; Gelmon K; Whelan T;  
Stambolic V  
**Sponsor** CBCF  
**Total Award** \$444,159  
**Title of Grant** A Phase III Randomized Trial of  
Metformin Versus Placebo on  
Recurrence and Survival in Early  
Stage Breast Cancer (MA.32)

**Principal Investigator** **Robinson A**  
**Co-Investigators** **Gregg R; Mates M**  
**Sponsor** Queen's Department of  
Oncology/UHKF  
**Total Award** \$19,000  
**Title of Grant** (KGH) Estrogen Receptor Beta and  
Chemotherapy Induced  
Amenorrhea

**Principal Investigator** **Robinson A; Mahmud A**  
**Sponsor** KGHRI/UHKF  
**Total Award** \$300,000  
**Title of Grant** Cancer Clinical Trials – support for  
CTU in Cancer Program

**Principal Investigator** **Robinson A; Mahmud A**  
**Sponsor** CCCTN  
**Total Award** \$50,000  
**Title of Grant** Canadian Cancer Clinical Trials  
Network (CCCTN)

**Principal Investigator** **Robinson A; Booth CM**  
**Sponsor** Clare Nelson Bequest  
**Total Award** \$10,000  
**Title of Grant** Bladder Cancer Outcomes for  
Metastatic Disease

**Principal Investigator** **Robinson A; Varma S**  
**Sponsor** Queen's Department of  
Oncology/UHKF  
**Total Award** \$19,000  
**Title of Grant** Estrogen Receptor Beta expression  
and Breast Cancer Outcomes

**Principal Investigator** **Schreiner LJ**  
**Co-Investigator** McAuley K; **Kerr A; Salomons G;**  
**Johnson D**  
**Sponsor** Canadian Institutes for Health  
Research  
**Total Award** \$369,250.00  
**Title of Grant** Advancing gel dosimetry for clinical  
radiation therapy





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