INNOVATIONS IN IMAGING

JOINT SCIENTIFIC MEETING

CARO COMP 2013
Montréal, QC

September 18-21 • Hilton Bonaventure
Welcome to CARO COMP 2013

1. **HOTEL HILTON BONAVENTURE**
   900 de la Gauchetiere West  -  (514) 878-2332

2. **WELCOME RECEPTION**  THURSDAY 7:15–8:30pm
   GALLERY MX
   333 Viger Ave W  -  (514) 315-8900

3. **CROF FUN RUN/WALK**  FRIDAY 6:10am
   MEET AT HOTEL HILTON BONAVENTURE LOBBY

4. **DINNER AND AWARDS CEREMONY**  FRIDAY 7:30pm
   FORTIFICATION ALLEY ATRIUM - WORLD TRADE CENTRE
   393 St. Jacques
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<th>SPONSORS</th>
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**SEPTEMBER 18-21, 2013**
**HILTON BONAVENTURE HOTEL**
**MONTRÉAL, QC**
September 18–21, 2013
Montréal, QC

Welcome to CARO COMP 2013

Innovations in Imaging

Joint Scientific Meeting
CARO COMP 2013
Montréal, QC

Welcome to CARO COMP 2013
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Objectives
The CARO COMP 2013 Joint Scientific Meeting will highlight Innovations in Imaging in radiation oncology and medical physics.

Attendees will join colleagues and leaders in radiation oncology, medical physics and medical imaging to discuss recent advances and future directions, opportunities, and challenges in medical imaging.

The meeting will provide participants with many opportunities to:
- hear from leaders in the field about recent advances in medical imaging applied to radiation oncology
- connect with colleagues in radiation oncology, medical physics, and radiation therapy
- catch up on the latest research from Canadian radiation oncologists, medical physicists, therapists, technologists, and students in these disciplines
- attend excellent pre-conference continuing education events.

Accreditation
This event is an accredited group learning activity under Section 1, as defined by the Royal College of Physicians and Surgeons of Canada for the maintenance of certification program.

Accreditation has been approved for:
- Canadian Association of Medical Radiation Technologists (CAMRT) – up to 31.5 Category A Credits.
- Medical Dosimetrist Certification Board (MDCB) – up to 41.5 credits.
- McGill University
- Commission on Accreditation of Medical Physics Educational Programs (CAMPEP)

Presentations
All oral presentations in this program contain 25% for interactivity.
- 90-minute presentations include 60-minute talk, 30-minute question and answer period.
- 60-minute presentations include 45-minute talk, 15-minute question and answer period.
- 12.5-minute presentations include 9-minute talk, 3.5-minute question and answer period.
- 9-minute presentations include 7-minute talk, 2-minutes question and answer period.
CARO Board of Directors 2012–2013

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Guest Faculty

John Aldrich, COMP Gold Medal Lecturer
François Benard
Alexis Bujold
Louis Collins
Fabio Cury
Guila Delouya
Marie Duclos
Carolyn Freeman
Tarek Hijal
John Kim
Tommy Knöös
Neil Kopec
Ives Levesque
Alvaro Martinez, Jean Roy Lecturer
Cynthia Ménard
Catalin Mihalciou
Michael Milosevic
William Parker
Kevin Petrecca
Thomas Pickles, Gordon Richards Lecturer
Panet Raymond
Andrew Reader
David Roberge
Isabelle Roy
Jeffrey Siewerdsen
Luis Souhami
Robert Turcotte
Marcel van Herk, CARO Lecturer
Woodrow Wells
Welcome to Montreal and the 27th Annual Scientific Meeting (ASM) of the Canadian Association of Radiation Oncology (CARO) which this year is a joint meeting with our sister organization, the Canadian Organization of Medical Physicists (COMP)!

Every year the program and organization exceeds our expectations and resets the bar higher than previous years. This is due in no small part to the efforts of the JSM Scientific Committee, led by Dr. Chandra Martens and Dr. Stephen Breen, and our capable meeting organizer, Mary Hooey. We are grateful to them for the countless hours they devote to the preparation for the meeting. The other reason behind the success is you—our members and attendees—your scientific work, your interest, your engagement in our societies and professional activities is what makes this meeting a success.

The theme this year is **Innovations in Imaging**. As always, there are interesting symposia as well as many oral and poster presentations.

And don’t forget the social activities—the Welcome Reception on Thursday, Annual Dinner and Awards Ceremony on Friday and the FUN Run/Walk on Friday morning. It was such fun the last two years, come and join us and bring your colleagues along.

Please call, email or stop me in the hallways to let me and other CARO Board members know what else our society can do for you. In the meantime, enjoy CARO COMP 2013.

Fondly,

Andrea Bezjak
CARO President

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Bienvenue à Montréal et à la 27e Réunion scientifique annuelle (RSA) de l’Association canadienne de radio-oncologie (ACRO) qui, cette année, est une réunion conjointe avec notre organisation sœur, l’Organisation canadienne des physiciens médicaux (OCPM) !

Chaque année, le programme et l’organisation dépassent nos attentes et qu’ils réussissent toujours à surpasse le niveau d’excellence fixé par les réunions antérieures. C’est principalement grâce aux efforts du comité scientifique de RSC, dirigé par la Dre Chandra Martens et le Dr Stephen Breen, et notre organisatrice de réunion compétente Mary Hooey, et nous les remercions pour les innombrables heures qu’ils consacrent à la préparation de la réunion. L’autre raison derrière ce succès, c’est vous—nos membres et nos participants—vos travaux scientifiques, votre intérêt, votre engagement dans nos sociétés et nos activités professionnelles sont ce qui fait le succès de cette réunion.

Le thème de la réunion de cette année est « Innovations en imagerie ». Comme toujours, il y a des symposiums intéressants, ainsi que des présentations orales et par affiches.

Et n’oubliez pas les activités sociales—la réception de bienvenue le jeudi, le souper annuel et la cérémonie de prix le vendredi et la diverticourse/marche le vendredi matin. C’était si plaisant les deux dernières années; joignez-vous à nous et amenez vos collègues.

Veuillez, appeler, envoyer un courriel ou m’arrêter dans les corridors pour me faire savoir à moi et à d’autres membres du Conseil de l’ACRO ce que notre société peut faire d’autre pour vous. Entre-temps, profitez du symposium ACRO OCPM 2013.

Chaleureusement,

Andrea Bezjak
Président de l’ACRO
Dear Colleagues,

It is my pleasure to welcome you to the 59th Annual Scientific Meeting (ASM) of the Canadian Organization of Medical Physicists (COMP). As a joint meeting with the Canadian Association of Radiation Oncology (CARO), this year’s meeting has the additional benefit of providing a forum for inter-professional dialogue to enhance collaboration and ultimately improve patient care.

The Joint Scientific Committee, under the very capable leadership of Dr. Chandra Martens, Dr. Stephen Breen with support from Mary Hooey, has developed an exciting program of scientific, continuing education and networking activities. This year’s theme “Innovations in Imaging” has something for everyone.

I would also like to take this opportunity to thank our corporate sponsors for their generous support. In addition to making this meeting possible, their presence also provides an excellent opportunity to investigate the latest advances in product lines, which are so essential to our profession.

I encourage you to take full advantage of the opportunities to acquire knowledge and share experiences so that you get the most possible value from the meeting. Enjoy Montreal!

Luc Beaulieu, PhD
COMP President

Chers collègues,

J’ai le plaisir de vous accueillir à la 59e Réunion scientifique annuelle (RSA) de l’Organisation canadienne des physiciens médicaux (OCPM). Comme réunion conjointe avec l’Association canadienne de radio-oncologie (ACRO), la réunion de cette année offre l’avantage additionnel d’offrir un forum pour le dialogue interprofessionnel afin d’accroître la collaboration et, finalement, d’améliorer les soins aux patients.

Le Comité scientifique mixte, sous la direction très compétente de la Dre Chandra Martens et du Dr Stephen Breen avec l’appui de Mary Hooey, a élaboré un programme captivant d’activités scientifiques, de formation continue et de réseautage. Le thème de cette année « Innovations en imagerie » offre quelque chose à tous les participants.

J’aimerais aussi profiter de l’occasion pour remercier nos sociétés commanditaires pour leur soutien général. En plus de rendre cette réunion possible, leur présence fournit aussi une excellente occasion d’examiner les derniers progrès en matière de gammes de produits, qui sont si essentiels à notre profession.

Je vous encourage à profiter pleinement des occasions d’acquérir des connaissances et de partager des expériences afin que vous tirez le maximum de la réunion. Profitez de Montréal!

Luc Beaulieu, PhD
Président de l’OCPM
Dear Colleagues,

On behalf of the Joint Scientific Meeting organizing committee, we invite you to attend the CARO-COMP meeting in Montreal, Wednesday to Saturday, this September 18-21, 2013. The conference theme, Innovations in Imaging, will appeal to all in CARO and in COMP: from the physics of imaging, to diagnostic radiology, to applications in radiation oncology and in our clinical trials, this JSM has something interesting for all of us in the Medical Physics and Radiation Oncology communities.

This year’s committee has assembled a series of exciting, interesting, and varied invited speakers for the many plenary sessions, talks, poster sessions, workshops, and theme symposium. The CARO-COMP symposium will address the applications of medical imaging in guided therapies with three leaders in PET, CT, and MRI imaging; Drs François Benard, Jeff Siewerdsen and Cynthia Menárd. The CARO-ESTRO symposium will address quality management from physics and oncology perspectives in both Canada and Europe, with Drs Tommy Knöös and Michael Milosevic, moderated by Dr Michael Brundage. An exciting addition this year is the chance to meet invited lecturers after their talks in the new Learning Lounge, sponsored by SANOFI.

The proffered paper program is expanded with parallel sessions throughout the three days in the meeting. Poster discussion sessions will highlight the outstanding posters, and attendees will have the chance to meet and discuss with the presenters in the poster session.

Don’t miss out on the pre-conference courses for Residents, Fellows, and the new inaugural, “Updates in Radiation Oncology” course for staff Radiation Oncologists.

Many attendees will recall the dynamic JSM meeting held in Toronto in 2007. This year’s meeting in beautiful Montreal promises to be even more interesting and exciting!

We hope you will join us to celebrate all of the active academic accomplishments of the Canadian Medical Physics and Radiation Oncology communities.

Gain insight from leaders in our fields, renew your friendships, and enjoy fabulous academic, scholarly, and wonderful social activities this September in Montreal!

Don’t miss out! See you there,

Chandra Martens and Stephen Breen
Co-Chairs, CARO COMP 2013
Joint Scientific Meeting Committee
Bienvenue à ACRO OCPM 2013

Chers collègues,


Cette année, le comité a réuni tout un groupe de conférenciers captivants, intéressants et variés pour les nombreux symposiums thématiques, ateliers, séances plénières, conférences et séances d’affiches. Le symposium ACRO-OCPM abordera le thème des applications de l’imagerie médicale dans les traitements guidés, grâce à la présence de trois chefs de file dans le domaine de l’imagerie par TEP, par TACO et par IRM, soit Drs François Bénard, Jeff Siewerdsen et Cynthia Ménard. Le symposium ACRO-ESTRO abordera le thème de la gestion de la qualité dans le domaine de la physique et de l’oncologie autant au Canada qu’en Europe, avec les Drs Tommy Knöös et Michael Milosevic et le Dr Michael Brundage qui agira comme modérateur. Une nouvelle captivante cette année, le Salon de l’apprentissage commandité par SANOFI, donnera l’occasion aux délégués de rencontrer les conférenciers invités après leur conférence.

Le programme d’articles soumis a été élargi par la présentation de séances parallèles au cours des trois journées de la réunion. Lors des séances de discussion des affiches pour souligner les affiches dignes de mention, les délégués auront l’occasion de rencontrer les présentateurs de la séance d’affiches et de discuter avec eux.

Ne manquez pas les cours préparatoires pour résidents et fellows ainsi que le nouveau cours « Mise à jour en radio-oncologie » pour les radio-oncologues en exercice.

De nombreux délégués se rappelleront de la RSC dynamique qui a eu lieu à Toronto en 2007. La réunion de cette année dans la belle ville de Montréal promet d’être encore plus intéressante et captivante!

Nous espérons que vous vous joindrez à nous pour célébrer toutes les réalisations en recherche universitaire active des membres des communautés canadiennes de la physique médicale et de la radio-oncologie.

C’est un rendez-vous à Montréal en septembre prochain pour en apprendre davantage grâce aux chefs de file dans vos domaines, revoir de vieux amis et participer à des activités universitaires, scientifiques et sociales exceptionnelles!

C’est à ne pas manquer! Au plaisir de vous y voir.

Chandra Martens et Stephen Breen

Les coprésidents, ACRO OCPM 2013

le comité de la Réunion scientifique conjointe
# Committee Meetings Schedules

## COMP Committees

**MONDAY SEPTEMBER 16, 2013**
- 8:00-5:00: COMP Office *St. Lambert*
- 8:00-5:00: CCPM Examination *St. Laurent*
- 8:00-5:00: CCPM Examination *St. Michel*
- Meals *St. Leonard*

**TUESDAY SEPTEMBER 17, 2013**
- 8:00-5:00: COMP Office *St. Lambert*
- 8:00-5:00: CCPM Examination *St. Laurent*
- 8:00-5:00: CCPM Examination *St. Michel*
- Meals *Pointe Aux Trembles*
- 2:00-4:00: Communications Committee Jacques-Cartier
- 4:00-6:00: Professional Affairs Committee Jacques-Cartier
- 6:00-9:00: Science and Education Committee Jacques-Cartier

**WEDNESDAY SEPTEMBER 18, 2013**
- 8:00-5:00: COMP Office *St. Lambert*
- 8:00-12:00: COMP Board Meeting Jacques-Cartier
- 10:00-12:00: Imaging Task Force *St. Laurent*
- 12:00-2:00: Lunch *Salon AB*
- 1:00-4:00: CCPM Board Meeting Jacques-Cartier
- 1:00-4:00: QARSAC Committee *St. Laurent*
- 4:00-6:00: Joint COMP/CCPM Board Committee Jacques-Cartier

**THURSDAY SEPTEMBER 19, 2013**
- 12:15-1:45: COMP Student Lunch *Mansfield*
- 12:15-1:45: Treatment Planning Quality Assurance *St. Leonard*
- 4:20-5:50: CCPM AGM *Castillon*

**FRIDAY SEPTEMBER 20, 2013**
- 12:45-2:15: Gold Medal Luncheon *Belvedere* (*by invitation*)
- 5:00-6:30: CCPM AGM *Portage*

**SATURDAY SEPTEMBER 21, 2013**
- 7:00-8:00: CAMRT Breakfast *St. Michel*

## CARO Committees

**TUESDAY SEPTEMBER 17, 2013**
- 12:00-4:30: CPQR *St. Leonard*

**WEDNESDAY SEPTEMBER 18, 2013**
- 8:00-12:00: CPQR *St. Leonard*
- 11:55-12:55: Resident and Fellows Committee *Westmount*
- 5:30-8:00: CARO Board Committee *St. Pierre*

**THURSDAY SEPTEMBER 19, 2013**
- 12:15-1:45: Program Directors *St. Michel*
- 12:15-1:45: Manpower Committee *St. Pierre*
- 12:15-1:45: Finance Committee *St. Laurent*
- 4:20-5:50: CARO AGM *Westmount*

**FRIDAY SEPTEMBER 20, 2013**
- 7:30-8:30: Corporate Advisory Committee *St. Leonard*
- 7:30-8:30: Symptom Control in Radiation Oncology Advocacy Group *St. Michel*
- 7:30-8:30: Education Committee *St. Pierre*
- 8:00-8:30: CARO Website Committee *St. Laurent*
- 12:35-2:25: Specialty Committee in Radiation Oncology *St. Michel*
- 12:45-2:15: CARO International Communications Work Group *Mansfield*
- 12:45-2:15: Membership Committee *St. Pierre*
- 12:45-2:15: ROLIG *St. Laurent*
- 1:00-2:15: CROF Board *St. Leonard*
- 4:00-5:00: CARO, COMP, CAMRT Executive Committee *St. Leonard*
- 5:00-6:30: Canadian Brachytherapy Group AGM *Mansfield*

**SATURDAY SEPTEMBER 21, 2013**
- 10:00-11:00: CARO JSM Debrief *CARO Registration Office*
PRECONFERENCE EVENTS

7:30-4:10
CARO RESIDENT REFRESHER COURSE  Westmount
Facilitator: Shahida Ahmed
OBJECTIVES: Upon completion of this course, the attendees should be able to:
I review the principles of management of common cancers including breast, lung, sarcomas and cancer of rectum and anal canal, with emphasis on radiation treatment planning
I understand the impact of advancement in Imaging in radiation treatment planning.
7:30-8:00  Breakfast and Registration
8:00-8:10  WELCOME AND INTRODUCTION
8:10-9:00  RECTAL CANCER  Neil Kopek
9:00-9:50  ANAL CANAL  Guila Delouya
9:50-10:10  Break
10:10-11:00  SARCOMA  David Roberge
11:00-11:50  BREAST  Tarek Hijal
11:50-1:00  Lunch
1:00-1:50  LUNG / SBRT  Alexis Bujold
1:50-2:40  TREATMENT PLANNING  William Parker
2:40-3:00  Break
3:00-4:00  CAREER COUNSELING
4:00-4:10  CLOSING REMARKS AND EVALUATIONS

8:00-5:15
RADIATION ONCOLOGIST UPDATES COURSE  Outremont
Facilitator: Chandra Martens
OBJECTIVES: This course is for radiation oncology staff who would like an update to refresh their knowledge or skills in site specific topics, particularly with Canadian content. This is great for staff switching treatment sites, cancer centres, or for those starting up new clinical programs. It is important for maintenance of continuing education and lifelong learning. Participants will learn:
I current treatment techniques
I planning—including contouring, specific margins, dose-standard/ and hypo fractionated
I latest in clinical trials
I steps involved in starting up a new treatment program ie SRS, SBRT.
7:30-8:00  Breakfast and Registration
8:00-8:15  WELCOME AND INTRODUCTIONS
8:15-9:30  CNS  Luis Souhami, Panet Raymond, Kevin Petrecca
9:30-10:45  BREAST  Marie Duclos, Isabelle Roy
10:45-11:00  Break
11:00-12:15  SKIN  Woodrow Wells
12:15-1:00  Lunch
1:00-2:15  SARCOMA  Carolyn Freeman, Robert Turcotte
2:15-3:30  MELANOMA  Fabio Cury, Catalin Mihalciou
3:30-3:45  Break
3:45-5:00  GASTROINTESTINAL – RECTAL  Neil Kopek
GASTROINTESTINAL – PANCREAS  David Roberge
GASTROINTESTINAL – ESOPHAGUS  John Kim
5:00-5:15  CLOSE AND EVALUATION
5:30-8:00  CARO BOARD COMMITTEE  St. Pierre
7:00pm–9:00pm

**COMP-CCPM CE EVENT**
*Verdun Lachine Lasalle*

Facilitator: François DeBlois

**OBJECTIVES:** Medical images have taken on a greater role in guiding treatment, both in radiotherapy and surgery. This session highlights medical physics research and developments in Montréal in the realm of medical imaging. After this session, participants will be able to identify new applications of ultrasound, PET and MRI in image-guided therapies. Participants will be able to describe the underlying physical causes of signals which give rise to the information in medical images for guidance, and they will be able to compare the cost, benefit and potential in the developing applications of these imaging technologies.

**IBIS: NEURONAVIGATION WITH FAST REGISTRATION OF PRE-OP MRI AND INTRA-OP ULTRASOUND**
Louis Collins

**MRI IN RADIATION ONCOLOGY PRACTICE**
Ives Levesque

**RECENT RESEARCH HIGHLIGHTS IN PET RECONSTRUCTION AND ANALYSIS**
Andrew Reader
Thursday September 19, 2013

7:00-7:45  Breakfast and Registration Lower Level
7:00-7:45  MEET AND GREET Portage
7:45-8:00  WELCOME Montréal Ballroom

Stephen Breen, Chandra Martens

CARO and COMP Presidential Address
Andrea Bezjak (President), Marco Carlone (President Elect)

8:00-9:20  CCPM CARO Theme Symposium
François Benard, Cynthia Ménard, Jeffrey Siewerdsen
Moderators: Aaron Fenster, Gerard Morton

Advances in medical imaging have changed patient management in all aspects of medicine, particularly in radiation oncology.

OBJECTIVES: After this session, participants will be able to:
1. contrast innovative applications of MR, PET and CT
2. compare recent developments in these imaging modalities
3. describe recent advances in the underlying technology and clinical use of these modalities, and
4. select which imaging modalities are most appropriate for contemporary clinical practice and upcoming clinical trials.

9:20-9:50  Break

9:50-11:20  RESIDENT/YOUNG INVESTIGATOR COMPETITION Montréal Ballroom
Moderators: Jerry Battista, Khalil Sultanem

OBJECTIVES: To review Canadian Radiation Oncology Residents and Young Investigators Research Projects.

1. GENOMIC INSTABILITY IN PROSTATE CANCER: ROLE OF COMMON FRAGILE SITES (CFS) Alireza Fotouhi Ghiam², Gaetano Zafarana³, Emilie Lalonde¹, Jenna Sykes¹, Wan L Lam¹, Alice Meng¹, Michael Milosevic¹, Paul C Boutros¹, Theo van der Kwast¹, Robert G Bristow¹ University of Toronto, Toronto, ON; ²British Columbia Cancer Research Centre, Vancouver, BC

2. HOW ACCURATE DO WE KNOW PHOTON CROSS SECTIONS AT RADIATION THERAPY ENERGIES? Elsayed Ali², Ben Spencer², Malcolm McEwen³, Dave Rogers² ¹The Ottawa Hospital Cancer Centre, Ottawa, ON; ²Carleton University, Ottawa, ON; ³National Research Council Canada, Ottawa, ON

3. LATE TOXICITY AND HEALTH-RELATED QUALITY OF LIFE IN PROSTATE CANCER PATIENTS TREATED WITH SINGLE FRACTION HIGH-DOSE-RATE BRACHYTHERAPY AND HYPOFRACTIONATED EXTERNAL BEAM RADIOTHERAPY Negin Shahid, Andrew Loblaw, Hans Chung, Patrick Cheung, Ewa Szumacher, Cyril Danjoux, Raxa Sankreacha, Lijing Zhang, Gerard Morton University of Toronto, Toronto, ON


5. AN EFFICIENT AND ACCURATE AUTOMATIC BRAIN TUMOUR SEGMENTER Lindsay Rowe¹, Idanis Diaz², Bret Hoehn², Pierre Boulanger³, Russell Greiner¹, Albert Murtha¹ ¹Cross Cancer Institute, Edmonton, AB; ²University of Alberta, Edmonton, AB


7. INTER-RATER RELIABILITY OF THE CATEGORIZATION OF LATE RADIOGRAPHIC CHANGES AFTER LUNG STEREOTACTIC BODY RADIATION THERAPY (SBRT) Muhammad Faruqi, Meredith Giuliani, Hamid Raziee, Mei Ling Yap, Heidi Roberts, Lisa Le, Anthony Brade, John Cho, Alex Sun, Andrea Bezjak, Andrew Hope University of Toronto, Toronto, ON

9 AN ASSESSMENT OF THE IMPACT OF CLOSE OR POSITIVE RESECTION MARGINS FOLLOWING MASTECTOMY FOR DUCTAL CARCINOMA IN SITU (DCIS): A POPULATION-BASED ANALYSIS Jonathan Klein1, Iwa Kong1, Sharon Nofech-Mozes1, Wedad Hanna2, Deva Thiruchelvam2, Lawrence Paszat1, Alan Tuck1, Sandip Sengupta1, Susan J Done1, Naomi Miller1, Bruce Youngson1, Leela Elavathil1, Prashant A Jani2, Eileen Rakitch1 1University of Toronto, Toronto, ON; 2Institute for Clinical Evaluative Sciences, Toronto, ON; 3University of Western Ontario, London, ON; 4Queen’s University, Kingston, ON; 5McMaster University, Hamilton, ON; 6Thunder Bay Regional Health Sciences Centre, Thunder Bay, ON

10 FIRST DEMONSTRATION OF INTRA-FRACTIONAL TUMOUR-TRACKED IRRADIATION ON A MOVING TARGET USING 2D DYNAMIC MR IMAGES ON LINAC-MR Jihyun Yun, Keith Wachowicz, Marc Mackenzie, Satyapal Rathee, Don Robinson, B Gino Fallone University of Alberta, Edmonton, AB

11:20-12:10 CARO Lecture
Moderator: Andrea Bezjak

Have We Reached the Limits of Accuracy in Modern Radiotherapy? Marcel Van Herk

OBJECTIVES: The participants will:
I understand the accuracy of the total image guided radiotherapy chain
I identify the main limiting factors in the currently achieved accuracy
I to explain why margin reduction should be exercised with extreme caution and under well controlled circumstances.

12:10-1:50 Lunch (on your own)

1:50-3:20 Concurrent Oral Sessions

EXPERIMENTAL THERAPEUTICS, MOLECULAR IMAGING AND CELLULAR BIOLOGY Westmount

Moderators: David Palma, Bassam Abdulkarim

OBJECTIVES: Upon completion of this session, the attendees should be able to:
I describe novel applications of MRI and Raman spectroscopy to monitor response to radiation
I compare the response of different cell types to ionizing radiation
I identify imaging modalities and techniques for response monitoring.

11 DEVELOPMENT AND CHARACTERIZATION OF NOVEL UROPORPHYRINogen DECARBOXYLASE (UROD) INHIBITORS FOR CANCER THERAPY Jennifer Kwam1, Zhan Zhang2, Noriko Nakatsugawa1, Jui-Wen Huang3, Yi-Kun Chiang1, Yulia Jitkova4, Emma Ito1, Jonathan Lovel1, Aaron Schimmer1, Jonathan Sessler2, Kenneth Yip3, Fei-Fei Liu4 1Princess Margaret Cancer Centre, Toronto, ON; 2The University of Texas at Austin, Austin, TX; 2Industrial Technology Research Institute, Hsin-chu, Taiwan, Taiwan; 3University at Buffalo, State University of New York, Buffalo, NY

12 MIGRATION OF TRIPLE NEGATIVE BREAST CANCER CELLS STIMULATED BY FRACTIONATED IRRADIATION Benoit Paquette1, Gina Bouchard1, Hélène Therriault1, Caroline Saucier1, Rachel Bujold2 1Université de Sherbrooke, Sherbrooke, QC; 2Centre Hospitalier Universitaire de Sherbrooke, Sherbrooke, QC

13 THE ROLE OF STEM-LIKE CELLS IN REGIONAL RADIOSENSITIVITY OF THE LUNG Ola Maria1, Ahmed Maria2, Norma Ybarra2, Krishinima Jeyaseelan1, Sangkyu Lee1, Jessica Perez1, Shirley Lehner1, Sergio Faria1, Monica Serban1, Jan Seuntjens1, Issam El Naqa1 1McGill University, Montréal, QC; 2Tanta University, Tanta, Al Gharbiah, Egypt

14 MRI PERFUSION IMAGING: A BIOMARKER OF EARLY RESPONSE FOLLOWING RADIATION TO BRAIN METASTASES Arjun Sahgal, Raphael Jakubovic, Hary Soliman, Rachael Milwid, Armin Elaghi, Richard Aviv University of Toronto, Toronto, ON

15 RAMAN SPECTROSCOPIC DETECTION OF RADIATION-INDUCED GLYCOGEN SYNTHESIS IN RADIORESISTANT TUMOUR CELLS Quinn Matthews1, Samantha Harder2, Martin Isabelle1, Alexandre Brolo2, Andrew Jirasek2, Julian Lunn1 1British Columbia Cancer Agency, Victoria, BC; 2University of Victoria, Victoria, BC

16 RAMAN SPECTROSCOPY FOR IN VITRO CHARACTERIZATION OF CELL RADIOSENSITIVITY AT CLINICALLY RELEVANT DOSES Samantha Harder1, Quinn Matthews2, Martin Isabelle1, Julian Lunn1, Alexandre Brolo2, Andrew Jirasek1 1University of Victoria, Victoria, BC; 2British Columbia Cancer Agency, Victoria, BC
17 STUDY OF DOSE-VOLUME PARAMETERS AND THE Bystander Effect in MRT-IRRADIATED Cell Cultures using an Automated Analysis of Gamma-H2AX Images to quantify DNA Damage
Danielle Anderson1, Bonnie Andrais2, Razmik Mirzayans1, E Albert Siegbahn3, B Gino Fallone1, Brad Warkentin1
1University of Alberta, Edmonton, AB; 2Cross Cancer Institute, Edmonton, AB; 3Stockholm University, Stockholm, Sweden

18 PHASE VII STUDY OF PALLIATIVE RADIATION AND SORAFENIB FOR PATIENTS WITH METASTATIC RENAL CELL CARCINOMA AND PAINFUL BONE METASTASES
Kathy Han1, Eric Leung2, Charles Cho1, Jennifer Knox1, Michael Jewett1, Jason Xie1, Douglass Vines1, Stephen Breen1, Anthony Brade1, Michael Milosevic1
1University of Toronto, Toronto, ON; 2University of Western Ontario, London, ON

EDUCATION, SOCIO-BEHAVIOURAL AND POPULATION SCIENCE

Moderators: Zahra Kassam, Chandra Martens

OBJECTIVES: Upon completion of this session, the attendees should be able to:
- be informed on specific topics in radiation medicine, including peer review, bone health, needs of rural patients, role of nurses and therapists, workload parameters, guideline development and consensus, and rapid breast plan approval process.

20 PEER REVIEW IN RADIATION ONCOLOGY: WHO, WHAT, WHEN, WHERE, HOW, BUT WHY? Brian Liszewski Odette Cancer Centre, Toronto, ON

21 BONE HEALTH IN PROSTATE CANCER SURVIVORS RECEIVING ANDROGEN DEPRIVATION THERAPY (ADT): EXAMINING ENABlers AND BARRIERS TO CARE
Katie Bies, Jennifer Jones, Pamela Catton, Padraig Warde, Neil Fleshner, Andrew Matthew, Shabbir AliBhai University of Toronto, Toronto, ON

22 PROSPECTIVE EVALUATION OF UNMET NEEDS OF RURAL CANCER SURVIVORS: COMPARISON BETWEEN FOUR FIRST NATIONS AND FOUR NON-FIRST NATION COMMUNITIES
Robert Olson1, Dana Munroe2, Kristin Turnbull3, Pamela Tobin1, Amanda Ward1 1British Columbia Cancer Agency, Prince George, BC; 2British Columbia Cancer Agency, Vancouver, BC

23 THE GREY AREA: DEFINING SCOPE OF PRACTICE FOR NURSES AND RADIATION THERAPISTS WITHIN THE RADIATION ONCOLOGY PROGRAM FOCUSING ON ROLE CLARITY, ENHANCED COMMUNICATION AND IMPROVED COLLABORATION
Lisa Di Prospero, Arlene Court, Sheila Robson, Philiz Goh, Alison McAndrew University of Toronto, Toronto, ON

24 EXTERNAL BEAM RADIOTHERAPY WORKLOAD PARAMETERS FOR STRATEGIC PLANNING AND RESOURCE ALLOCATION
Marc Gaudet, Pablo Santibanez, John French, Scott Tyldesley British Columbia Cancer Agency, Vancouver, BC

25 ACCELERATED PHYSICIAN APPROVAL PROCESS FOR STANDARD TANGENTIAL BREAST IRRADIATION PLANS
Marija Popovic, Sonia Skamene, William Parker, Tarek Hijal McGill University Health Centre, Montréal, QC

26 DEVELOPMENT OF PROVINCIAL GUIDELINES FOR THE ASSESSMENT OF RADIATION ONCOLOGY PHYSICIAN WORKLOAD: AN EVALUATION OF WORKLOAD DISPARITY BETWEEN DISEASE SITE-GROUPS
Gaurav Bahl, Tetteh Ago Dalhousie University, Halifax, NS

27 TOWARDS CANADIAN CONSENSUS ON KEY QUALITY INDICATORS FOR RADIATION TREATMENT PROGRAMS USING A MODIFIED DELPHI PROCESS
Jeffrey Cao1, Scott Tyldesley2, Brenda Bass3, Michael Milosevic3, Michael Brundage2 1British Columbia Cancer Agency, Vancouver, BC; 2British Columbia Cancer Agency, Vancouver, BC; 3Queen’s University, Kingston, ON; 4University of Toronto, Toronto, ON

28 IMPLEMENTING AND EVALUATING SYSTEM CHANGES BASED ON SIMULATION MODELLING
John French4, Travis Nordin1, Scott Tyldesley3, Martin Puterman5 1British Columbia Cancer Agency, Vancouver, BC; 2University of British Columbia, Vancouver, BC
### Diagnostic, Verification and Functional Imaging

**Moderator:** Philippe Després, Glenn Wells

**Objectives:** Upon completion of this session, the attendees should be able to:

- Describe novel applications of MR, PET and optical imaging in radiotherapy planning and response assessment
- Compare imaging modalities and image evaluation techniques and match them to clinical applications.

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<td>¹University of Western Ontario, London, ON; ² GE Healthcare, Toronto, ON</td>
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<th>An EPID Prediction Model for SRS VMAT Delivery</th>
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<th>Development and Comparison of Tissue Characterization Formalisms for Dual Energy Computed Tomography</th>
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<td>Sarah Mattonen¹, David Palma¹, Cornelis Haasbeek², Suresh Senan², Aaron Ward³</td>
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<td>Alexandra Bourque¹, Jean-François Carrier², Hugo Bouchard²; ¹ McGill University, Montréal, QC; ²CHUM, Montréal, QC</td>
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DOSIMETRY AND TREATMENT PLANNING  Castillon

Moderators: Crystal Angers, Michelle Nielsen

OBJECTIVES: Upon completion of this session, the attendees should be able to:

1. Evaluate the implications of target volume motion and the requirements for planning target volume margin assessment in contemporary radiotherapy.

2. Describe techniques for measuring, calculating, and assessing variability in radiation dose delivery.

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38 A NEW PROBABILISTIC MODEL FOR DNA STRAND BREAKS SIMULATION USING MONTE CARLO TRACK STRUCTURES  Piotr Pater1, Jan Seuntjens1, Mario Bernal2, Issam El Naqa3
   1McGill University, Montréal, QC; 2Universidade Estadual de Campinas, Campinas, São Paulo State, Brazil

39 UTILITY OF POSTOPERATIVE DIFFUSION TENSOR IMAGING FOR THE DEFINITION OF HIGH-GRADE GLIOMA RADIOTHERAPY TARGET VOLUMES  Robert Kosztyla1, Vitali Moiseenko2, Stefan Reinsberg1, Roy Ma1, Michael McKenzie4, Don Wilson5, Francois Benard6, Talia Vrtinsk7, Brian Toyota1, Alan Nichol8
   1University of British Columbia, Vancouver, BC; 2University of California, San Diego, La Jolla, CA; 3British Columbia Cancer Agency, Vancouver, BC; 4Vancouver General Hospital, Vancouver, BC

40 ON QUANTITATIVE ASSESSMENT OF DEFORMABLE CT-CT REGISTRATION  Parminder S Basran1, Dante Capaldi2 British Columbia Cancer Agency, Victoria, BC; 3University of Windsor, Windsor, ON

41 STEREOTACTIC ABLATIVE BODY RADIOTHERAPY (SABR) OF LUNG TUMOURS USING A 10X FLATTENING FILTER FREE VOLUMETRIC MODULATED ARC THERAPY ON A VARIAN TRUEBEAM LINAC  Ante Mestrovic, David Peterson, Parminder Basran British Columbia Cancer Agency, Victoria, BC

42 DETERMINATION OF A POPULATION-BASED PTV MARGIN FOR PATIENTS WITH INTERMEDIATE-RISK PROSTATE CANCER BEING TREATED WITH A SINGLE-FRACTION STEREOTACTIC BODY RADIATION THERAPY (SBRT) BOOST  Alexandru Nicolae, Niranjan Venugopal, Patrick Cheung, Andrew Loblaw, William Chu, Melanie Davidson, Sunil Jain, Ananth Ravi University of Toronto, Toronto, ON

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3:20-4:20  POSTER VIEWING SESSION/BREAK  Salon A

4:20-5:50  CARO AGM  Westmount

CCPM AGM  Castillon

7:15-8:30  Welcome Reception  Gallery MX 333, Viger Ouest
Friday September 20, 2013

6:30-7:30 **Fun Run/Walk** 900 DE LA GAUCHETIERE W.
*Meet in the Hotel Lobby at 6:10 am*

7:30-8:30 **Breakfast and Registration Lower Level**

8:30-9:30 **Gordon Richards Lecture** *Montréal Ballroom*
Moderator: Fei-Fei Liu
The Untold Story of Particle Therapy: Deceit and Triumph  Tom Pickles

**OBJECTIVES:** Upon completion of this session, the attendees should be able to:

- understand the background and details of the “cyclotron saga” of neutron development in the UK
- appreciate how pi-meson development avoided similar issues in Canada.

9:30-10:30 **Gold Medal Presentation** *Montréal Ballroom*
John Aldrich

10:30-11:00 **Break**

11:00-12:30 **RESIDENT/YOUNG INVESTIGATOR COMPETITION** *Montréal Ballroom*

Moderators: Marcel Van Herk, Anthony Brade

**OBJECTIVES:** To review Canadian Radiation Oncology Resident and Young Investigators Research Projects.

47 **ZEBRAFISH XENOTRANSPLANTATION AS A MODEL TO PREDICT TUMOUR RADIOSENSITIVITY**  Marlon Hagerty, Chansey Veinotte, Graham Dellaire, Jason Berman Dalhousie University, Halifax, NS

48 **CONTEMPORARY TRENDS IN PATIENTS WITH LOW OR INTERMEDIATE RISK PROSTATE CANCER MANAGED WITH ACTIVE SURVEILLANCE BY RADIATION ONCOLOGY AND UROLOGY**  Michael Peacock1, Jonathan Aning2, Mira Keyes1, Martin Gleave2, David Spicer1, Brian Baker1, Michael McKenzie1 British Columbia Cancer Agency, Vancouver, BC; 2University of British Columbia, Vancouver, BC

49 **PREDICTORS OF COSMETIC OUTCOME FROM RAPID: A RANDOMIZED TRIAL OF ACCELERATED PARTIAL BREAST IRRADIATION USING 3D CONFORMAL EXTERNAL BEAM RADIATION THERAPY**  David Peterson1, Ivo Olivotto1, Tim Whelan1, Pauline Truong1, Sameer Parpia3, Do-Hoon Kim3, Tanya Berrang1, Iwa Kwong2, Brandy Cochrane3, Isabelle Germain5, Alan Nichol6, Mohamed Akra7, Melanie Reed8, Sophie Lavertu9, Anthony Fyles10, Jim Julian10, Theresa Trotter11, Francisco Perera12 Carson Leong13 1British Columbia Cancer Agency, Victoria, BC; 2Juravinski Cancer Centre, Hamilton, ON; 3Ontario Clinical Oncology Group, Hamilton, ON; 4Juravinski Cancer Centre, Hamilton, ON; 5Hotel Dieu de Quebec, Quebec City, QC; 6British Columbia Cancer Agency, Vancouver, BC; 7Cancer Care Manitoba, Winnipeg, MB; 8British Columbia Cancer Agency, Kelowna, BC; 9Hôpital Notre-Dame, Montréal, QC; 10Princess Margaret Cancer Centre, Toronto, ON; 11Tom Baker Cancer Centre, Calgary, AB; 12London Regional Cancer Program, London, ON; 13British Columbia Cancer Agency, Surrey, BC on behalf of RAPID trial investigators, OCG and BCCA, Hamilton, ON

50 **TEACHING ONCOLOGY RESIDENTS ANATOMY: A NOVEL, HANDS-ON MULTIDISCIPLINARY TEACHING INTERVENTION**  Jasbir Jaswal1, Leah D’Souza2, Marjorie Johnson2, Francis Chan2, KengYeow Tay2, Kevin Fung2, David Palma2 1London Regional Cancer Centre, London, ON; 2University of Western Ontario, London, ON

51 **SEGMENTED RECTAL DVH ANALYSIS: A METHOD TO STUDY TOXICITY IN PROSTATE RADIOTHERAPY**  Theodore Mutanga, Grace Zeng, Tessa Larsen, Glenn Jones University of Toronto, Mississauga, ON

52 **PSA IN PREDICTING TIME TO BIOCHEMICAL RECURRENCE IN MEN WITH PROSTATE CANCER TREATED WITH RADIOTHERAPY**  Robert Stewart, Ian Dayes, Himu Lukka, Mark Levine McMaster University, Hamilton, ON

53 **LATE EFFECTS IN SURVIVORS OF CRANIOFACIALGIOMA: A RETROSPECTIVE REVIEW**  Andrea Lo, Keerat Sidhu, Farah Abdulsatar, Alan Nichol, Fuchsia Howard, Haroon Hasan, Karen Goddard University of British Columbia, Vancouver, BC

54 **TIME TRENDS IN TUMOUR REGRESSION DURING LOCALLY ADVANCED LUNG CANCER RADIOTHERAPY: 4D PET VERSUS 4DCT**  Nathan Becker1, Mei L Yap2, Alexander Sun2, Vladimir Pekar3, Katy Clarke1, Claudia Leavens2, Andrea Bezjak1, Jean-Pierre Bissonnette1 1Princess Margaret Cancer Centre, Toronto, ON; 2Philips Healthcare, Markham, ON
55 DETECTION OF LOCAL RECURRENTS AFTER STEREOTACTIC ABLATIVE RADIOThERAPY FOR LUNG CANCER: A MATCHED COHORT STUDY OF PATHOLOGY-PROVEN RECURRENCES

Kitty Huang1, Sashendra Senthi2, David A Palma3, Femke OB Spoelstra4, Andrew Warner1, Ben J Slotman2, Suresh Senan2
1London Regional Cancer Program, London, ON; 2VU University Medical Centre, Amsterdam, Netherlands

56 RE-IRRADIATION SPINE STEREOTACTIC BODY RADIOThERAPY (SBRT) FOLLOWING MULTIPLE COURSES OF PRIOR RADIATION: SPINAL CORD TOLERANCE

Chia-Lin Tseng, Daniel Letourneau, Arjun Sahgal University of Toronto, Toronto, ON

12:30-2:30  Lunch (on your own)

Concurrent Oral Sessions

GENITOURINARY CANCER, GYNECOLOGIC CANCER AND RADIOSURGERY Westmount

Moderators: Luis Souhami, Michael Lock

OBJECTIVES: Upon completion of this session, the attendees should be able to:

1. know more about low dose CT imaging in testicular cancer; toxicity in early stage testicular cancer; androgen deprivation and bone toxicity in prostate cancer; and prostate cancer treated with hypofractionated XRT, ATOM status and cervical cancer.

57 PHASE II STUDY OF LOW DOSE CT IMAGING FOR DETECTION OF RELAPSE DURING SURVEILLANCE IN STAGE I TESTICULAR GERM CELL TUMOURS

Peter Chung, Martin O’Malley, Michael Jewett, Tony Panzarella, Malcolm Moore, Philippe Bedard, Lynn Anson-Cartwright, Betty Tew-George, Mary Gospodarowicz, Padraig Ward Princess Margaret Cancer Centre, Toronto, ON

58 WHICH RADIATION TECHNIQUE IS BETTER? A COMPARISON OF BIOCHEMICAL AND TOXICITY OUTCOMES OF LOW- RISK PROSTATE CANCER PATIENTS TREATED WITH LOW-DOSE BRACHYTHERAPY, STEREOTACTIC BODY RADIOThERAPY AND EXTERNAL BEAM RADIOThERAPY

Perakka Sethukavalan1, Patrick Cheung1, Gerard Morton1, Laura D’Alimonte1, Andrea Deabreu1, Alexandre Mamedov1, Liying Zhang2, Hans Chung2, Robert Nam3, Andrew Loblaw1 1Odette Cancer Centre, Toronto, ON; 2MacroStat Inc, Richmond Hill, ON

59 THE IMPACT OF BONE MINERAL DENSITY, FRACTURE ASSESSMENT, & OSTEOPOROSIS EDUCATION IN MEN TREATED BY ANDROGEN DEPRIVATION FOR PROSTATE CANCER

Michelle Nadler, Shabbir Alibhai, Pamela Catton, Charles Catton, Jennifer Jones University of Toronto, Toronto, ON

60 10 YEARS OF HYPOFRACTIONATED RADIOThERAPY (66GY AT 3GY PER FRACT) FOR FAVOURABLE-RISK PROSTATE CANCER: LONG-TERM OUTCOMES

Sergio Faria, Nita Patel, Fabio Cury, Marc David, Marie Duclos, George Shenouda, Luis Souhami McGill University, Montréal, QC

61 TESTICULAR SEMINOMA: ELIMINATION OF UNNECESSARY TOXICITY IN EARLY STAGE DISEASE

Swetha Sridharan1, Peter Chung1, Michael Jewett1, Eshetu Atenafu1, Philippe Bedard1, Malcolm Moore1, Joan Sweet1, Martin O’Malley1, Lynn Anson-Cartwright2, Mary Gospodarowicz2, Padraig Ward1 1University of Toronto, Toronto, ON; 2Princess Margaret Cancer Centre, Toronto, ON

62 CARO RAZER

TUMOUR ATAXIA TELANGIECTASIA-MUTATED (ATM) STATUS AND OUTCOME IN PATIENTS WITH LOCALLY ADVANCED CERVICAL CANCER TREATED WITH CHEMORadioThERAPY

Alexander Klimowicz1, Elizabeth Kornaga1, Michelle Dean1, Gwyn Bebb1, Peter Craighead1, Prafull Ghatage1, Anthony Magliocco2, Susan Lees-Miller1, Corinne Doll3 1University of Calgary, Calgary, AB; 2Moffitt Cancer Centre, Tampa, FL

63 ELEKTA

TRENDS IN UTILIZATION OF BRACHYTHERAPY IN CERVICAL CANCER IN THE UNITED STATES

Kathy Han1, Michael Milosevic1, Anthony Fyles1, Melanie Pintilie1, Akila Viswanathan2 1University of Toronto, Toronto, ON; 2Harvard University, Boston, MA

64 POST-OPERATIVE STEREOTACTIC BODY RADIOThERAPY (SBRT) FOR PATIENTS WITH SPINAL METASTASIS: PREDICTIVE AND PROGNOSTIC FACTORS ANALYSIS

Ameen Alomair1, Laura Masucci1, Laurence Masson1, Mikki Campbell1, Eshetu Atenafu1, Amy Parent1, Daniel Letourneau1, Eugene Yu1, Michael Fehlings2, Arjun Sahgal3 1Princess Margaret Cancer Centre, Toronto, ON; 2Toronto Western Hospital, Toronto, ON; 3Sunnybrook Odette Cancer Centre and Princess Margaret Cancer Centre, Hospital, Toronto, ON

65 MONITORING VASCULAR RESPONSE TO STEREOTACTIC RADIOSURGERY IN A BRAIN TUMOUR MODEL USING CT PERFUSION

Timothy Pok Chi Yeung1, Baraa Al-Khazraj1, Laura Morrison2, Lisa Hoffman2, Dwayne Jackson1, Ting-Yim Lee1, Glenn Bauman3, Slav Yartsev3 1University of Western Ontario, London, ON; 2Lawson Health Research Institute, London, ON; 3London Health Sciences Centre, London, ON
**Objectives:** Upon completion of this session, the attendees should be able to:
- Know more about oligometastases and non-small cell lung cancer, esophagitis post lung cancer treatment, SBRT and population outcomes, breast cancer cavity delineation using clips, breath hold and breast cancer treatment, screening and detection of metastatic breast cancer, in LN positive patients, re-irradiation in rectal cancer, and short course radiation in rectal cancer.

66 **Is there an oligometastatic state in non-small cell lung cancer (NSCLC)? A systematic review of outcomes and prognostic factors**

Allison Ashworth, George Rodrigues, Gabriel Boldt, David Palma
University of Western Ontario, London, ON

67 **Predicting esophagitis after chemoradiotherapy for non-small cell lung cancer: An individual patient data meta-analysis of >1000 patients**

David Palma1, Suresh Senan1, Cary Oberije1, Jose Belderbos2, Nuria Rodriguez de Dios4, Jeffrey Bradley5, R Bryan Barrigera6, Marta Moreno7, Tae Hyun Kim8, Sara Ramellos9, David Ball10, Ramesh Rengan1, Lawrence Marks1, Kim De Ruyck3, Andrew Warner4, George Rodrigues4
1VU University Medical Centre, Amsterdam, Netherlands; 2Maasstricht University Medical Centre, Maastricht, Netherlands; 3The Netherlands Cancer Institute-Antoni van Leeuwenhoek Hospital, Amsterdam, Netherlands; 4Universidad Pompeu Fabra, Barcelona, Spain; 5Washington University School of Medicine, St. Louis, MO; 6Indiana University School of Medicine, Indianapolis, IN; 7University of Navarra, Pamplona, Spain; 8National Cancer Center, Goyang, Korea; 9Campus Bio-Medico University, Rome, Italy; 10Peter MacCallum Cancer Centre, Melbourne, Australia; 11University of Pennsylvania, Philadelphia, PA; 12University of North Carolina, Chapel Hill, NC; 13Ghent University, Gent, Belgium; 14University of Western Ontario, London, ON

68 **Population-based outcomes of stereotactic body radiotherapy for non-small cell lung cancer**

Annie Houle1, Ruobing Yang2, Mitchell Liu3, Eric Berthelet4, Jinn Wu5, Hannah Carolan6, Fred Hus7, Chad Lund8, Steven Thomas9, William Kwa3, Devin Schellenberg10
1University of British Columbia, Vancouver, BC; 2University of British Columbia, Abbotsford, BC; 3University of British Columbia, Surrey, BC

69 **A pooled analysis of outcomes for non-small cell lung cancer (NSCLC) patients with synchronous oligometastases: can we achieve long-term survival with curative-intent treatment?**

Daniel Toguri1, Gwendolyn Griffioen1, Max Dahle2, George Rodrigues3, Patricia De Haan3, Ben Slotman3, Brian Yaremko3, Suresh Senan4, David Palma5
1University of Western Ontario, London, ON; 2Vrije Universiteit Amsterdam, Amsterdam, Netherlands

70 **Improvement of consistency in delineating breast lumpectomy cavity using surgical clips**

Stavash Atchian, Pejman Sadeghi, Wladyslawa Cwajna, Lucy Helyer, Dorianne Rheume, Maureen Nolan, Robert Rutledge, Virginia Calverley, Sean Bennett, James Robar Dalhousie University, Halifax, NS

71 **Using heart measurements to assess patients for deep inspiration breath hold in adjuvant left breast irradiation**

Ryan Carlson, Kyle Hiemstra, Shannon Pearson, Xin Qiu, Wei Xu, Anthony Fyles, Caroline Chung Princess Margaret Cancer Centre, Toronto, ON

72 **Is radiological screening for metastasis in new breast cancer patients with 1 to 3 involved axillary lymph nodes really necessary?**

Boris Valev1, Andrew Cooke2
1Tom Baker Cancer Centre, Calgary, AB; 2University of Manitoba, Winnipeg, MB

73 **Local recurrence in rectal cancer: time to revisit reirradiation?**

Jelena Lukovic1, Jean-Marc Bourque1, May Abdel-Wahab2
1London Regional Cancer Program, London, ON; 2Cleveland Clinic, Cleveland, OH

74 **Neoadjuvant short-course radiotherapy alone (SCRT) followed by delayed surgery in locally advanced rectal cancer final results of a Phase II study**

Sergio Faria1, Neil Kopek1, Tarek Hijal1, Sender Liberman1, Patrick Charlebois1, Barry Stein2, Sarkis Meterissian3, Ari Meguerditchian1, Eric Debroux1, Donna Tataryn2
1McGill University, Montréal, QC; 2St Mary’s Hospital, Montréal, QC
CLINICAL APPLICATIONS  MHC

Moderators: Boyd McCurdy, Wendy Smith

OBJECTIVES: Upon completion of this session, the attendees should be able to:
I apply advanced radiotherapy techniques to solve quality control and quality assurance problems in clinical radiotherapy
I select problem-solving strategies to address difficult problems in current clinical practice.

75  IDENTIFYING IMPORTANT RADIOThERAPY ERROR TRENDS THROUGH THE USE OF A STRUCTURED INCIDENT TAXONOMY Catarina Lam, Zaynab Muraj, Kathy Man, Michael Milosevic Princess Margaret Cancer Centre, Toronto, ON

77  TECHNIQUES TO MITIGATE METALLIC ARTIFACTS FROM BRACHYTHERAPY SOURCES IN CT IMAGES Nelson Miksys1, Chen Xu2, Luc Beaulieu2, Rowan Thomson1 1Carleton University, Ottawa, ON; 2Université Laval, Centre Hospitalier Universitaire de Québec, Québec, QC

78  DIRECT MEASUREMENT OF GANTRY SPEED AND DOSE RATE STABILITY FOR QUALITY ASSURANCE OF ARC THERAPY DELIVERY TECHNIQUES Daniel La Russa, Crystal Angers, Michael Roumeliotis, Lee Gerg The Ottawa Hospital Cancer Centre, Ottawa, ON

79  IMPACT OF IMMOBILIZATION ON TREATMENT DELIVERY PRECISION FOR LIVER SBRT Renée Korol, Matt Wronski, Fiona Lochray, William Chu, Hans T Chung Odette Cancer Centre, Toronto, ON

80  FACTORS AFFECTING PLAN COMPLEXITY AND PATIENT SETUP SENSITIVITY OF VMAT TREATMENTS OF HEAD AND NECK CANCER Alasdair Syrne1, Ellis Mitrou2, Jessica Quantin3 1Carleton University, Montréal, QC; 2Université de Montréal, Montréal, QC; 3Polytech Marseille, Marseille, France

81  RETROSPECTIVE QUANTITATIVE STUDY OF THE DOSIMETRIC QUALITY OF IMRT HEAD AND NECK TREATMENT PLANS USING A PLAN ANALYSIS SOFTWARE WITH A CUSTOMIZABLE METRIC ALGORITHM Geneviève Jarry, Dominique Martin Hôpital Maisonneuve-Rosemont, Montréal, QC

82  IMPLEMENTATION OF AN INVERSE PLANNED INTENSITY MODULATED RADIATION THERAPY TECHNIQUE FOR BREAST TANGENTIAL RADIOTHERAPY; COMPARISON TO FORWARD PLANNED FIELD IN FIELD Michelle Chaney British Columbia Cancer Agency, Victoria, BC

83  A PATIENT SPECIFIC APPROACH TO MOTION COMPENSATING TREATMENT MARGIN SELECTION FOR LUNG TARGETS Kyle Foster, Rob Barnett, Ernest Osei University of Waterloo, Waterloo, ON

76  RADIATION DOSE DROP OFF OF VOLUMETRIC MODULATED ARC THERAPY IN COMPARISON TO NON-Coplanar Three Dimensional Conformal Radiotherapy for Lung Stereotactic Body Radiation Therapy Annie Houle, Mitchell Liu, Eric Berthelet, Devin Schellenberg, William Kwai University of British Columbia, Vancouver, BC

BRACHYTHERAPY  Portage

Moderators: Brian Keller, Marjory Jollecour

OBJECTIVES: Upon completion of this session, the attendees will:
I be informed about cervical brachytherapy in Canada, partial breast irradiation and cosmesis, melanoma and surface mold brachytherapy, choroidal melanoma and sclera doses, needle tracking in prostate brachytherapy, D90 prostate dose metrics post implant, prostate cancer failure and dose metrics analysis, image guided HDR for recurrent vaginal tumours, and prediction of GI toxicity after cervical brachytherapy.

84  THE CHANGING LANDSCAPE OF BRACHYTHERAPY FOR CERVICAL CANCER: A CANADIAN PATTERN OF PRACTICE SURVEY UPDATE, 2009–2012 Tien Phan1, Layth Mula-Hussain1, Simon Pavaman1, Andrew Pearce1, David D’Souza4, Nikhilesh Patil2, Laurel Trapton2, Peter Craighead2, Corinne Doll1 1Tom Baker Cancer Centre, Calgary, AB; 2Christian Medical College Vellore, Vellore, Tamil Nadu, India; 3Regional Cancer Centre, Health Sciences North, Sudbury, ON; 4London Regional Cancer Program, London, ON; 5Dalhousie University at Capital District Health Authority, Halifax, NS

85  PARTIAL BREAST IRRADIATION IN EARLY BREAST CARCINOMA: DOES PRIMARY TUMOUR LOCATION AFFECT OVERALL COSMETIC OUTCOME FOR LOW DOSE RATE PERMANENT SEED IMPLANTATION PATIENTS? Merrylee McGuffin1, Rebekah Shiro2, Jean-Philippe Pignol2, Brian Keller2, Laura D’Alimonte3 1Odette Cancer Centre, Toronto, ON; 2University of Toronto, Toronto, ON
86 SURFACE MOLD BRACHYTHERAPY FOR NON-MELANOMA SKIN CANCER: CANADIAN PATTERNS OF PRACTICE  Jim Rose1, Pierre-Yves McLaughlin2, David D’Souza3, Ranjan Sur3, Conrad Falkson4 1Queen’s University, Kingston, ON; 2University of Western Ontario, London, ON; 3McMaster University, Hamilton, ON

87 ANALYSIS OF SCLERAL DOSE DURING BRACHYTHERAPY OF CHORDOIDAL MELANOMA  Matthew Larocque, Geetha Menon, Kurian Joseph, Ezekiel Weis University of Alberta, Edmonton, AB

88 ACCURACY ASSESSMENT OF A 3D ELECTROMAGNETIC NEEDLE TRACKING SYSTEM FOR PROSTATE BRACHYTHERAPY  Samir Boutaleb1, Olivier Fillon1, Dirk Binnekamp1, Luc Beaulieu2 1Université Laval, Québec, QC; 2Philips Electronics Nederland BV, Eindhoven, Netherlands

89 D90 UNCHAINED: THE INADJUSTABLE WORTH OF POST IMPLANT DOSE METRICS  W James Morris, Ingrid Spadinger, Mira Keyes, Jeremy Hamm, Michael McKenzie, Torn Pickles British Columbia Cancer Agency, Vancouver, BC

90 CASE-CONTROL DOSIMETRIC ANALYSIS OF LOW DOSE RATE PROSTATE BRACHYTHERAPY PATIENTS WITH CONFIRMED LOCAL FAILURE  Maryam Afsari Golshan2, Ingrid Spadinger3, W James Morris1, Jeremy Hamm1, Mira Keyes1 1British Columbia Cancer Agency, Vancouver, BC; 2University of British Columbia, Vancouver, BC

91 IMAGE GUIDED RE-IRRADIATION WITH HIGH DOSE RATE INTERSTITIAL BRACHYTHERAPY FOR LOCALLY RECURRENT VAGINAL TUMOURS  Nikhil Patil1, David D’Souza2, Ericka Wiebe3 George Hajdok2, Akira Sugimoto2, Michel Prefontaine2, Leanne Derrah2, Tammie Murray2, Kathleen Surry2 1Dalhousie University, Halifax, NS; 2University of Western Ontario, London, ON; 3University of Alberta, Edmonton, AB

92 ARE GEC-ESTRO DOSE-VOLUME PARAMETERS PREDICTIVE OF LATE GI TOXICITY FROM 3D IMAGE-GUIDED BRACHYTHERAPY FOR CERVIX CANCER?  Marc Gaudet1, Peter Lim1, Ingrid Spadinger1, Conrad Yuen1, Dubash Rustom1, Zhang Susan1, Wong Frances2, Beverly Lester3, François Bachand4, Christina Aquino-Parsons1 1British Columbia Cancer Agency, Vancouver, BC; 2British Columbia Cancer Agency, Surrey, BC; 3British Columbia Cancer Agency, Abbotsford, BC; 4British Columbia Cancer Agency, Kelowna, BC

4:00-5:00 Concurrent Poster Discussion Sessions

OBJECTIVES: Upon completion of this session, the attendees should be able to:
1 match dose calculation and measurement techniques with clinical applications
2 compare novel applications of different imaging modalities and match them to clinical applications
3 identify factors which influence patient, healthcare provider and healthcare system perceptions of radiation medicine delivery.

DOSIMETRY, MEASUREMENT, CALCULATION AND CLINICAL APPLICATIONS  Westmount
Moderators: Cheryl Duzenli, Horacio Patrocinio

Abstract # 140, 141, 142, 143, 144, 145, 146, 147

MR, CT, PET AND OPTICAL IMAGING  Outremont
Moderators: Rob Weersink, John Schreiner

Abstract # 120, 121, 122, 123, 124, 125, 126, 128

CLINICAL APPLICATIONS: BREAST, CNS AND EDUCATION INNOVATIONS  MHC
Moderators: Thierry Muanza, Gunita Mitera

Abstract # 107, 109, 114, 115, 164, 165, 166

CLINICAL APPLICATIONS: GU AND APPLIED RADIATION SCIENCES  Portage
Moderators: Lisa DiProspero, Anand Swaminath

Abstract # 188, 189, 190, 193, 217, 218, 225, 257

5:00-6:30 COMP AGM  Portage

5:00-6:30 CANADIAN BRACHYTHERAPY GROUP AGM  Mansfield

7:30 LA SOIRÉE JEANS NOIRE DINNER AND AWARDS BLACK JEANS CEREMONY  Fortification Alley Atrium – World Trade Centre 393, St. Jacques
# Saturday September 21, 2013

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<tr>
<td>7:15-8:00</td>
<td>Breakfast and Registration</td>
<td>Lower Level</td>
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<tr>
<td>7:00-8:00</td>
<td><strong>BEST OF ACURA</strong></td>
<td>Montréal Ballroom</td>
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**OBJECTIVES:** At the end of this session the learner will:
- Highlight results of several of the projects that have been supported by ACURA research grants in the past 12 years, in the area of prostate cancer.
- Discuss implication of those projects in the understanding and management of prostate cancer.

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<td>8:00-9:30</td>
<td><strong>WORKSHOPS</strong></td>
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## WORKSHOP 1 Verdun

**QUALITY INDICATORS IN RADIATION ONCOLOGY: IMPLEMENTATION OF THE CANADIAN PARTNERSHIP FOR QUALITY RADIOTHERAPY – QUALITY ASSURANCE GUIDANCE FOR CANADIAN RADIATION TREATMENT PROGRAMS**

Jeffrey Cao, Michael Milosevic, Michael Brundage, Scott Tyldesley

**OBJECTIVES:** At the end of this session the learner will:
- Be up-to-date with revisions to key quality indicators of CPQR QA Guidance document.
- Understand aspects of RT delivery including programmatic organization, personnel qualifications, planning and treatment equipment performance, and issues related to policies and procedures.
- Have opportunity to provide feedback and learn from other participants’ experiences with implementation.

## WORKSHOP 2 Cote-St.-Luc

**RESEARCH METHODS WORKSHOP IV: THE P-VALUE FALLACY AND OTHER COMMON ERRORS IN APPROACHING AND INTERPRETING STATISTICAL ANALYSES**

Jackson Wu

**OBJECTIVES:** At the end of this session the learner will:
- Clarify the nature and inferential limitations of “statistical significance” in null hypothesis testing.
- Recognize common errors and misconceptions in analyzing data from observational studies.
- Understand important fundamental assumptions associated with common analytical approaches, such as univariate analyses, multivariable regression, censoring in survival analysis, and missing data.
- Learn to identify and critique methodological deficiencies that threaten the internal validity of clinical research.

## WORKSHOP 3 Hampstead

**FINDING THE TARGET—MOLECULAR TESTING AND PERSONALIZED MEDICINE WITHIN NSCLC**

Natasha Leigil, Anthony Brade, Andrea Bezjak

**OBJECTIVES:** At the end of this session the learner will:
- Understand the implication of molecular testing of diagnosis on treatment choices and outcomes in NSCLC.
- Understand new techniques used in to test for EGFR and ALK mutations.
- Understand the role of the radiation oncologist in the molecular testing process.

## WORKSHOP 4 Mansfield

**RETRIEVING DATA FROM DATABASE**

John Kildea

**OBJECTIVES:** At the end of this session the learner will:
- Understand how a modern database is structured and how data is stored in relational tables.
- Become familiar with the tools available to extract data from a database including how to connect to the database, how to write simple SQL queries and produce reports.
- Be able to understand how his/her database works, how to connect to it, extract data and produce a simple report.
WORKSHOP 5  Mont-Royal

BRINGING ADAPTIVE RADIOThERAPY TO CLINICAL PRACTICE: THE OCAIRO WORKSHOP David Jaffray, Jerry Battista, John Schreiner, Michael Milosevic, David Palma

OBJECTIVES: At the end of this session the learner will:
I be aware of the Ontario Consortium on Adaptive Interventions in Radiation Oncology (OCAIRO) program/community
I be informed regarding current clinical evidence for adaptive radiotherapy (ART)
I identify available and emerging equipment, tools, and processes for ART.

REFRESHER COURSE  Portage

ADVANCES IN IMAGE GUIDED RADIOThERAPY Gino Fallone

OBJECTIVES: At the end of this session the learner will:
I understand the need for MR images for radiation therapy delivery
I understand the physics/engineering in resolving integration, dosmetric issues created by magnetic field, radiation in MR receiver coils and automatic real-time tracking and treatment.

9:30-10:30  Jean Roy Lecture  Montréal Ballroom
Moderator: Boris Bahoric

The Role of HDR Brachytherapy in Monotherapy for Prostate Cancer  Alvaro Martinez

10:30-11:00  Break

11:00-12:30  CARO-ESTRO Symposium  Montréal Ballroom
Moderators: Michael Brundage, Ross Halperin

Quality and Safety in Radiation Medicine: European and Canadian Perspectives
Tommy Knöös, Michael Milosevic

OBJECTIVES: This collaborative session between CARO and ESTRO will:
I review the importance of coordinated quality and safety initiatives in radiation treatment
I highlight ongoing and planned quality and safety initiatives in Canada and Europe
I identify commonalities between Canada and Europe and areas for future collaboration.

12:30-12:45  Break
12:45-2:00  REVIEWER’S CHOICE  Montréal Ballroom

Moderators: Stephen Breen, Sergio Faria

OBJECTIVES: After the session, participants will have learned about IMRT hypofractionated boost in prostate cancer, metformin and prostate cancer treatment, monte carlo model and gold nanoparticles radiosensitization, re-irradiation of spinal metastases, radiation centre location optimization, and 3D video of radiation dose for surgical guidance.

93  ACURA
CONCOMITANT HYPOFRACTIONATED IMRT BOOST FOR HIGH RISK PROSTATE CANCER: 5 YEAR RESULTS  Patrick Cheung1, D Andrew Loblaw1, Ewa Szumacher1, Cyril Danjoux1, Richard Choo2, Lijing Zhang2, Alexandre Mamedow1, Andrea Deabreu1, Gerard Morton1  Odette Cancer Centre, Toronto, ON; 1Mayo Clinic, Rochester, MN; 2MacroStat, Toronto, ON, Canada

94  METFORMIN USE IN PROSTATE CANCER PATIENTS TREATED WITH RADIOTHERAPY: IMPROVED OUTCOMES DUE TO ENHANCED TUMOUR OXYGENATION  Alan Dal Pra, Vanessa Zannella, Rachel Glicksman, Jenna Sykes, Hala Muaddi, Anthony M Joshua, Brad G Wouters, Michael Milosevic, Marianne Koritzinsky, Robert G Bristow  Princess Margaret Cancer Centre, Toronto, ON

95  A MONTE CARLO BASED RADIobiological MODEL TO EXPLORE GOLD nanoparticle RADIosensitizeZATION  Eli Lechtman, Shahram Mashouf, Priscilla Lai, Jean-Philippe Pignol  University of Toronto, Toronto, ON

96  AN INTERGROUP RANDOMIZED TRIAL OF SINGLE VERSUS MULTIPLE FRACTIONS (FX) FOR RE-IRRADIATION (RE-RT) OF PAINFUL BONE METASTASES (PBM)  NCIC CTG SC.20  Edward Chow1, Yvette van der Linden2, Daniel Roos3, William Hartsell4, Peter Hoskin5, Jackson Wu6, Michael Brundage7, Abdennour Nadib8, Carolyn Wilson9, Ralph Meyer9, Binghu Chen9, Rebecca Wong10  Sunnybrook Health Sciences Centre, Toronto, ON; 1Leiden University Medical Centre, RC Leiden, Netherlands; 2Royal Adelaide Hospital, North Tce, Adelaide, Australia; 3CDH Proton Center – A ProCure Center, Warrenville, IL; 4Mount Vernon Hospital, Northwood, Middlesex, United Kingdom; 5Tom Baker Cancer Centre, Calgary, AB; 6Centre of Southeastern Ontario and Kingston General Hospital, Kingston, ON; 7Centre Hospitalier Universitaire de Sherbrooke, Sherbrooke, QC; 8National Cancer Institute of Canada Clinical Trials Group, Kingston, ON; 9Princess Margaret Cancer Centre, Toronto, ON

97  OPTIMAL LOCATION OF RADIOThERAPY TREATMENT CENTRES WITH RESPECT TO GEOGRAPHIC ACCESS  Scott Tyldesley, Pablo Santibanez, Marc Gaudet, John French, Emma Liu  British Columbia Cancer Agency, Vancouver, BC

98  DISPLAYING 3D RADIATION DOSE ON ENDOSCOPIC VIDEO FOR THERAPEUTIC ASSESSMENT AND SURGICAL GUIDANCE  Robert Weersink1, Jimmy Qiu1, Andrew Hope1, John Cho1, Michael Sharpe1, Colleen Dickie1, Liis Teene2, Ralph DaCosta2, Jay Wunder3, Peter Ferguson3, David Jaffray1  Princess Margaret Cancer Centre, Toronto, ON; 2University Health Network, Toronto, ON; 3Mt. Sinai Hospital, Toronto, ON

2:00  CLOSING REMARKS

Stephen Breen, Chandra Martens
Poster Abstracts

99 VALIDATION OF A CONTOUR BASED DEFORMABLE REGISTRATION TOOL FOR EFFICIENT INTEGRATION OF MR IMAGING FOR PROSTATE HDR BRACHYTHERAPY
Niranjan Venugopal, Andrew Loblaw, Hans Chung, Gerard Morton, Ananth Ravi
University of Toronto, Toronto, ON

100 VERIFICATION OF VAGINAL CYLINDER POSITIONING DURING HDR VAGINAL VAULT BRACHYTHERAPY
Sofya Kobleva1, Amanda J Cherpak2, Joanna E Cygler3, Rajiv Samant4, Taghreed Al-Hindi5, Thuraya Al-Hajri6, Choan E7, Krystine Lupe8
1Grand River Regional Cancer Centre, Kitchener, ON; 2Ottawa Hospital Cancer Centre, Ottawa, ON; 3University of Ottawa, Ottawa, ON

101 A NEEDLE DEFLECTION MODEL FOR PREDICTING SEED MISPLACEMENTS IN 1-125 PERMANENT PROSTATE BRACHYTHERAPY
John Dillon1, Abdulkarim Muhaseen2, Emily Heath3, Ananth Ravi1 1Odette Cancer Centre, Toronto, ON; 2Ryerson University, Toronto, ON

102 ADJUVANT BRACHYTHERAPY FOR UTERINE MALIGNANCIES
Boris Bahoric1, Tamim Niazi1, Gabriela Stroian3, Te Vuong1, Thierry Muanza1, Khalil Sultanemi1 1Jewish General Hospital, Montréal, QC; 2McGill University, Montréal, QC

103 CT-BASED EVALUATION OF AN APPLICATOR LIBRARY MODEL SOFTWARE FOR CERVIX HDR BRACHYTHERAPY PLANNING
Daron Owen1, Daxa Saparia2, Aaron Vandermeer2, Catherine Neath1 1University of Toronto, Toronto, ON; 2RS McLaughlin Durham Regional Cancer Centre, Oshawa, ON

104 IMAGE-GUIDED BRACHYTHERAPY PLANNING USING MRI ALLOWS VAGINAL Dose REPORTING IN CERVICAL CANCER TREATMENT
Geetha Menon, Fleur Huang, Robert Pearcey, George Dunidas Cross Cancer Institute, Edmonton, AB

105 INTER-FRACTION VARIATION IN CYLINDER POSITION AND DOISMETRY IN VAGINAL CUFF HDR BRACHYTHERAPY
Audrey Roux1, Tiffany Phillips2, Marie-Anne Froment2, Susan Hiniker2, Bernard Fortin1, Elizabeth Kidd2 1Université de Montréal, Montréal, QC; 2Stanford University, Stanford, CA

106 BREAST CANCER SURVIVOR AND PRIMARY CARE PHYSICIAN PERCEPTIONS OF THE ABILITY OF PRIMARY CARE PHYSICIANS TO MANAGE FOLLOW UP CARE FOR BREAST CANCER
Sally Smith1, Savitri Singh-Carlson2, Cheryl Alexander2, Elaine Wai1 1University of British Columbia, Vancouver, BC; 2California State University, Long Beach, CA; 3British Columbia Cancer Agency, Victoria, BC

107 PROVINCIAL CHANGES IN THE USE OF A BOOST WITH ADJUVANT BREAST RADIOTHERAPY AFTER THE PUBLICATION OF THE EORTC 22881-10882 BOOST TRIAL
Elisa Chan, Scott Tyldesley, Caroline Speers, Alan Nichol British Columbia Cancer Agency, Vancouver, BC

108 INCIDENCE AND FACTORS ASSOCIATED WITH DEVELOPMENT OF LYMPHEDEMA IN WOMEN WITH LOCALLY ADVANCED BREAST CANCER RECEIVING MULTIMODALITY THERAPY
Fatimah Alfaraj, Robert Dinniwel, Tom Purdie, Grace Lee University of Toronto, Toronto, ON

109 DECISIONAL SUPPORT FOR WOMEN 60 YEARS AND OLDER DURING THEIR TREATMENT FOR STAGE I AND II BREAST CANCER – SINGLE INSTITUTIONAL STUDY
Ewa Szumacher1, Laura D’Alimonte1, Roseanna Presutti1 Edward Chow1, Merrylee McGuffin1, Jean-Philippe Pignol2, Lisa Di Prospero3, Mary Doherty4, Alex Kiss5, Jennifer Wong6 1University of Toronto, Toronto, ON; 2Queen’s University, Kingston, ON

110 LOW-RISK BREAST CANCER PATIENTS’ PERCEPTIONS OF ALTERNATIVE MODELS OF SURVIVORSHIP CARE
Kuldeep Singh-Ubbhi, Jaqueline L Bender, Nour Alkazaz, Pamela Catton, Fei-Fei Liu, Anthony Fyles, Robert Dinniwel, Lee Manchul, Wifred Levin, David McCready, Caroline Chung Princess Margaret Cancer Centre, Toronto, ON

111 PROVINCIAL CHANGES IN THE USE OF ADJUVANT BREAST RADIOTHERAPY AND TAMOXIFEN IN ELDERLY WOMEN AFTER THE PUBLICATION OF THE CALGB C3343 TRIAL
Elisa Chan1, Caroline Speers1, Sally Smith2, Scott Tyldesley1 British Columbia Cancer Agency, Vancouver, BC; 2British Columbia Cancer Agency, Victoria, BC

112 EARLY RESULTS OF A PROSPECTIVE COHORT STUDY ON INTRAOPERATIVE RADIATION THERAPY FOR EARLY BREAST CANCER AT A SINGLE INSTITUTION
Alexander Geng, Peter Richards, Nima Grissom, Lixi Yang, Amara Malik, John Lee California Pacific Medical Center, San Francisco, CA

113 DO LOCOLORGNAL RECURRENCE AND SURVIVAL OUTCOMES DIFFER IN WOMEN WITH NODE-NEGATIVE, HER2-POSITIVE BREAST CANCER TREATED WITH BREAST CONSERVING THERAPY VERSUS MASTECTOMY?
David Peterson1, Pauline Truong1, Cheryl Alexander1, Beto Sadek3, Mina Shenouda4, Alphonse Taghian3 1British Columbia Cancer Agency, Victoria, BC; 2University of British Columbia, Victoria, BC; 3Harvard University, Boston, MA
114 LOCAL CONTROL, PATTERNS OF FAILURE AND VERTEBRAL COMPRESSION FRACTURE AFTER SPINE STEREOTACTIC RADIO THERAPY FOR METASTATIC RENAL CELL CANCER Isabelle Thibault, Ameen Al-Omair, Giuseppina Laura Masucci, Laurence Masson-Côté, Fiona Lochray, Georg Bjarnason, Albert Yee, Renée Korol, Lu Cheng, Arjun Sahgal University of Toronto, Toronto, ON

115 IMPACT OF GLYCHEMA ON SURVIVAL IN Glioblastoma Minh Thi Tieu, Leif E Lovblom, Mairead McNamara, Warren Mason, Kuldeesh Ubhi, Elizabeth Tai, Normand Lapierre, Barbara-Ann Millar, Cynthia Ménard University of Toronto, Toronto, ON

116 EVALUATION OF HUMAN SPINAL CORD MOTION IN PATIENTS WITH SPINAL METASTASIS Chia-Lin Tseng1, Marshall Sussman1, Anna Simeonov1, Isabelle Thibault1, Daniel Letourneau2, Eugene Yu1, Arjun Sahgal1 1University of Toronto, Toronto, ON; 2Toronto General Hospital, Toronto, ON; 3Princess Margaret Cancer Centre, Toronto, ON

117 TEMPORAL CORRELATION BETWEEN VENOUS THROMBÖEMBOLISM DEVELOPMENT AND SURVIVAL IN Glioblastoma Multiforme Patients Clement Ho, Derek Leugner, Jacob Easaw, Gerald Lim University of Calgary, Calgary, AB

118 WITHDRAWN

119 VOLUMETRIC ANALYSIS OF HIPPOCAMPAL AND AMYGDALA STRUCTURAL CHANGES AFTER CHEMOTHERAPY AND PROPHYLACTIC CRANIAL IRRADIATION IN PATIENTS WITH LIMITED STAGE SMALL CELL LUNG CANCER Daniel Bernad1, Louis Collins2, FS Fonov3, Alexandra Fiocco4, Mengxiao Ge5, George Shenouda2, Valerie Panet-Raymond2, Paul Giacomini6, Raquel del Carpio1, Luis Souhami1 1Jewish General Hospital, Montréal, QC; 2McGill University Health Centre, Montréal, QC; 3Montréal Neurological Institute, Montréal, QC; 4Ryerson University, Toronto, ON

120 PET/MRI: FIRST YEAR EXPERIENCE John Patrick1, Eric Sabondjian2, Jean Théberge1, John Butler1, Gerald Moran1, Terry Thompson1, Jonathan Mandel1, Robert Stodilka2, Frank Prato3, Stewart Gaede4 1University of Western Ontario, London, ON; 2London Health Sciences Centre, London, ON; 3Lawson Health Research Institute, London, ON; 4Siemens Canada Ltd., London, ON

121 CT HEAD DOSE REDUCTION IN A GEographically DISPERSED HEALTH REGION THROUGH MEDICAL PHYSICS QUALITY CONTROL AND AAM PROTOCOL RECOMMENDATIONS Thor Bjarnason Interior Health Authority, Kelowna, BC

122 18-FLUOROCHELINE IMAGING OF LOCALIZED PROSTATE CANCER: FIRST EXPERIENCE WITH HYBRID PET/MRI Glenn Bauman1, Jonathan Mandel1, Cesare Romagnoli1, Irina Rachinsky1, Aaron Ward1, Eli Gibson1, Mena Gaede1, Madeleine Moussa1, Jose Gomez-Lemus1, Joseph Chin1, Steven Pautler1, John Butler2, Eugene Wong1, Ty Lee1 1University of Western Ontario, London, ON; 2St. Joseph’s Health Centre, London, ON

123 OPTIMIZED MEASUREMENT OF LIPID OLEFINIC PROTONS BY LOCALIZED MAGNETIC RESONANCE SPECTROSCOPY AT 3 T Ayhan Bingolbali, B Gino Fallone, Atiyah Yahya University of Alberta, Edmonton, AB

124 PREDICTION OF TUMOUR OUTCOMES USING JOINT FDG-PET/MRI DIAGNOSTIC IMAGING FEATURES Martin Vallières1, Carolyn Freeman1, Sonia Skamene1, Issam El Naqa1 1McGill University, Montréal, QC; 2McGill University Health Centre, Montréal, QC

125 MAGNETIC RESONANCE TO ULTRASOUND REGISTRATION FOR IMAGE-GUIDED PROSTATE BIOPSY Yue Sun, Roberts, Jing Yuan, Cesare Romagnoli, Aaron Fenster University of Western Ontario, London, ON

126 OPTICAL BIOPSY FOR THE ANALYSIS OF BRAIN TUMOUR MARGINS Derek Cappon, Zhaojun Nie, Thomas Farrell, Qiyan Fang, Joseph Hayward McMaster University, Hamilton, ON

127 AN OPTIMIZED MAGNETIC RESONANCE SPECTROSCOPY PRESS SEQUENCE FOR THE DETECTION OF GLYCEINE AT 9.4 T Brennen Dobberthien1, Anthony Tessier2, B Gino Fallone1, Atiyah Yahya1 1University of Alberta, Edmonton, AB; 2Cross Cancer Institute, Edmonton, AB

128 HYBRID PATIENT SPECIFIC SCATTER REDUCTION IN CONE BEAM COMPUTED TOMOGRAPHY: A PRELIMINARY DEMONSTRATION Congwu Cui, Idris Elbakri 1Credit Valley Hospital, Mississauga, ON; 2CancerCare Manitoba, Winnipeg, MB

129 A DIMENSIONLESS DYNAMIC CONTRAST ENHANCED MRI PARAMETER MAP FOR TARGET VOLUME DELINEATION Thomas Hrinovich, Trevor Thang, Charlie McKenzie, Glenn Bauman, Aaron Fenster, Eugene Wong University of Western Ontario, London, ON

130 IMAGING REGIONAL VENTILATION, PERFUSION, T1 AND PROTON DENSITY IN THE LUNGS OF ASTHMATICS Steven Thomas1, Helen Marshall2, Jim Wild2 1British Columbia Cancer Agency, Surrey, BC; 2University of Sheffield, Sheffield, Yorkshire, UK
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<td><strong>131</strong> QUANTIFICATION OF THE PERFORMANCE OF A MULTI-PROJECTION COMPTON SCATTER TOMOGRAPHY ALGORITHM FOR VARIOUS MEASUREMENT CONDITIONS <strong>Tamar Chigvinnadze, Stephen Pistorius</strong> University of Manitoba, Winnipeg, MB</td>
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<td><strong>132</strong> A THEORETICAL COMPARISON OF X-RAY ANGIOGRAPHIC IMAGE QUALITY USING ENERGY-DEPENDENT AND CONVENTIONAL SUBTRACTION METHODS <strong>Christiane Burton, Jess Tanguay, Ian A Cunningham</strong> University of Western Ontario, London, ON</td>
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<td><strong>133</strong> PLASTIC SCINTILLATION DOSIMETER FOR REAL-TIME MEASUREMENT OF FLUOROSCOPICALLY-GUIDED INTERVENTIONAL PROCEDURES <strong>Jonathan Boivin, Luc Beaulieu, Maxime Guillemette</strong> Université Laval, Québec, QC</td>
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<td><strong>134</strong> DIGITAL X-RAY METHOD TO ESTIMATE FAT CONTENT IN BREAST BIOPSIES <strong>Nancy McDonald, Curtis Laamanen, Robert Tang, Robert LeClair</strong> Laurentian University, Sudbury, ON</td>
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214 STEPWISE IMPLEMENTATION OF IMAGING CHANGES FOR CERVICAL CANCER BRACHYTHERAPY PLANNING USING EXISTING INFRASTRUCTURE: A MULTIDISCIPLINARY APPROACH TO ADVANCING PATIENT CARE Theodora Koulis1, Derek Brown1, Deepak Bhayana1, Laurel Traptow2, Karen Long2, Maree Patrick3, Gregg Nelson3, Peter Craighed1, Corrinne Doll1, Tien Phan1 1University of Calgary, Calgary, AB; 2Tom Baker Cancer Centre, Calgary, AB; 3Foothills Medical Centre, Calgary, AB

215 VOLUMETRIC MODULATED ARC THERAPY VERSUS FOUR-FIELD BOX RADIOTHERAPY FOR POSTOPERATIVE GYNECOLOGIC CANCER: ARE THEY COVERING THE SAME PLANNING TARGET VOLUME ADEQUATELY? Jelena Lukovic1, Nikhil Patel2, David D’Souza1, Barbara Millman1, Fakir Hatim1, Kathleen Surry1, Brian Yaremko1, Frances Whiston1, Eugene Wong1, George Hajdok1 London Regional Cancer Program, London, ON; 2Nova Scotia Cancer Centre, Halifax, NS; 1University of Western Ontario, London, ON

216 OUTCOME OF THE CERVIX UTERI CANCER PATIENTS TREATED WITH OR WITHOUT CONCURRENT CHEMO-RADIOTHERAPY INCORPORATING HIGH DOSE BRACHYTHERAPY Mohamed E El Sayed1, Yasir A Bahadur2, Ashraf H Hassouna1, Ehab E Fawzy1, Azza M Nasr2, Khalid Sait2, Bakr Ben Sadiq1 1King Faisal Specialist Hospital and Research Center Jeddah, Jeddah, Saudi Arabia; 2King Abdulaziz University Hospital, Jeddah, Saudi Arabia

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