Program

The Canadian Cancer Research Conference

November 27–30, 2011
Sheraton Centre Toronto

CCRA
ACRC
Canadian Cancer Research Alliance • Alliance canadienne pour la recherche sur le cancer

Thank you to all our supporters

$50,000 or more

Canadian Cancer Society / Société canadienne du cancer

CANADIAN PARTNERSHIP AGAINST CANCER / PARTENARIAT CANADIEN CONTRE LE CANCER

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$25,000 to $49,999

Alberta Innovates Health Solutions

Canadian Breast Cancer Foundation / Fondation canadienne du cancer du sein

Ontario Cancer Care Ontario Action Cancer Ontario

Cancer Research Society / Société de recherche sur le cancer

The Terry Fox Research Institute / L'Institut de recherche Terry Fox

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SickKids THE HOSPITAL FOR SICK CHILDREN Garron Family Cancer Centre

POGO PEDIATRIC ONCOLOGY GROUP OF ONTARIO

SickKids RESEARCH INSTITUTE

Special recognition to the CIHR Institute of Cancer Research for its support of the new principal investigator meeting held during this conference.

CONTENTS

EXECUTIVE PLANNING COMMITTEE

Elizabeth Eisenhauer, MD (Chair)
NCIC Clinical Trials Group, Queen's University & Canadian Partnership Against Cancer/CCRA

Mario Chevrette, PhD
McGill University & The Cancer Research Society

Stuart Edmonds, PhD
Canadian Partnership Against Cancer/CCRA

Patricia Falzon
Ontario Institute for Cancer Research

Nancy Kreiger, PhD
Cancer Care Ontario*

Victor Ling, PhD
The Terry Fox Research Institute

Pascale Macgregor, PhD
Ontario Institute for Cancer Research**

David Malkin, MD
The Hospital for Sick Children

Morag Park, PhD
McGill University & CIHR Institute of Cancer Research

Michael Wosnick, PhD
Canadian Cancer Society

**Previously represented by Joseph Pater, MD and John McLaughlin, PhD.*
***Previously represented by Tom Hudson, MD.*

MESSAGE FROM THE MEETING CO-CHAIRS

Welcome to the first Canadian Cancer Research Conference (CCRC) on behalf of the Canadian Cancer Research Alliance (CCRA). The CCRA, whose membership now comprises 31 cancer research funding agencies, was formed in 2004 to develop and facilitate large transformative cancer research initiatives, coordinate cancer research at a pan-Canadian level and to document cancer research activity in Canada. In our inaugural pan-Canadian Cancer Research Strategy (http://www.ccra-acrc.ca/PDF%20Files/Pan-Canadian%20Strategy%202010_EN.pdf), published last year, it was noted there was a need expressed by scientists from coast to coast for a national cancer research meeting where the breadth and excellence of Canadian cancer research could be showcased and where leading experts from all areas of cancer research in Canada could meet to exchange knowledge and share ideas. As the idea for this conference took hold, many member organizations of CCRA agreed that, instead of holding their own meetings this year, they would instead join efforts to support a truly national cancer research meeting.

We are proud of the excellent work done by the Scientific Program Committee under the leadership of Morag Park and David Malkin. We believe the goals of the conference will not only be achieved with ease but that it will also serve to provide trainees and new investigators with networking opportunities, and an increased awareness of the great science going on here in Canada.

We would like to take this opportunity to thank the important work and leadership of Stuart Edmonds, Kim Badovinac, and Melissa Cheung at the CCRA Secretariat that is supported by the Canadian Partnership Against Cancer and Patricia Falzon, Nicole Gleed, Stuart Lawler, and Laura Loney of the Ontario Institute for Cancer Research who, together, were the key organizers of this event.

Finally, and certainly not least, we thank the many organizations, listed on the frontispiece of the Program who have contributed with time, funding, and ideas to ensure the success of this conference.

Enjoy the conference!

Elizabeth A. Eisenhauer, MD, FRCP
Co-Chair, CCRA &
Chair, Research Advisory Group,
Canadian Partnership Against Cancer

Mario Chevrette, PhD
Co-Chair, CCRA

MESSAGE DES COPRÉSIDENTS DE LA CONFÉRENCE

L'Alliance canadienne pour la recherche sur le cancer (ACRC) vous souhaite la bienvenue à la première Conférence canadienne sur la recherche sur le cancer (CCRC). L'ACRC, qui a vu le jour en 2004, est maintenant composée de trente et un organismes subventionnant la recherche sur le cancer. Un de ses buts est de développer et de faciliter l'émergence de projets de recherche sur le cancer de grande envergure, qui contribueront à transformer cette recherche et la lutte contre le cancer au Canada. L'ACRC coordonne aussi les efforts de recherche sur le cancer au Canada tout en documentant les activités de recherche dans ce domaine. Lors de la publication inaugurale l'an dernier de notre «Stratégie pancanadienne de recherche sur le cancer» (http://www.ccra-acrc.ca/PDF%20Files/Pan-Canadian%20Strategy%202010_FR.pdf), les scientifiques d'un océan à l'autre exprimèrent le besoin de tenir une conférence nationale durant laquelle l'ampleur et l'excellence de la recherche sur le cancer au Canada pourraient être mises de l'avant, et où les experts canadiens de tous les domaines de la recherche sur le cancer se rencontreraient pour partager leur expertise, leur savoir-faire et leurs idées. Alors que l'idée de tenir une telle conférence faisait son chemin, plusieurs organisations membres de l'ACRC décidèrent de joindre leurs efforts et de remplacer cette année leur propre conférence en participant à l'organisation d'une conférence pancanadienne pour la recherche sur le cancer.

Nous sommes particulièrement fiers de l'excellent travail effectué par le comité responsable du programme scientifique sous la direction de Morag Park et de David Malkin. Nous croyons fermement que non seulement les objectifs de cette conférence seront facilement atteints, mais qu'en plus elle donnera l'opportunité aux nouveaux et futurs chercheurs d'étendre leur réseau de collaborateurs potentiels tout en permettant de prendre conscience de l'excellence de la recherche sur le cancer faite ici-même au Canada.

Nous aimerions profiter de cette occasion pour souligner le leadership et le travail colossal effectué par Stuart Edmonds, Kim Badovinac et Melissa Cheung au secrétariat de l'ACRC qui bénéficie du soutien du Partenariat canadien contre le cancer, de même que ceux de Patricia Falzon, Nicole Gleed, Stuart Lawler et Laura Loney de l'Institut ontarien de recherche sur le cancer, qui, ensemble, furent les principaux organisateurs de cet évènement.

Nous ne pourrions conclure sans remercier chaleureusement toutes les organisations mentionnées sur la page frontispice de ce programme qui ont donné de leur temps, partagé leurs idées et fourni leur soutien afin que cette conférence soit un succès.

Bonne conférence !

Elizabeth A. Eisenhauer, M.D., FRCPC
Coprésidente, ACRC
Présidente, Groupe consultatif sur la recherche
Partenariat canadien contre le cancer

Mario Chevrette, Ph. D.
Coprésident, ACRC

COMITÉ EXÉCUTIF DE PLANIFICATION

Elizabeth Eisenhauer, M.D. (Présidente)
Groupe des essais cliniques de l'INCC, Queen's University & Partenariat canadien contre le cancer/ACRC

Mario Chevrette, Ph. D.
Université McGill et la Société de recherche sur le cancer

Stuart Edmonds, Ph. D.
Partenariat canadien contre le cancer/ACRC

Patricia Falzon
Institut ontarien de recherche sur le cancer

Nancy Kreiger, Ph. D.
Action Cancer Ontario*

Victor Ling, Ph. D.
L'institut de recherche Terry Fox

Pascale Macgregor, Ph. D.
Institut ontarien de recherche sur le cancer**

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The Hospital for Sick Children

Morag Park, Ph. D.
Université McGill et IRSC – Institut du cancer

Michael Wosnick, Ph. D.
Société canadienne du cancer

** Auparavant représenté par Joseph Pater, M.D. et John McLaughlin, Ph. D.*
*** Auparavant représentée par Tom Hudson, M.D.*

SCIENTIFIC PROGRAM COMMITTEE

David Malkin, MD (Co-Chair)
The Hospital for Sick Children

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McGill University & CIHR Institute of Cancer Research

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Université de Montréal

Stuart Peacock, PhD
BC Cancer Agency

Daniel Rayson, MD
Dalhousie University

Stephen Robbins, PhD
University of Calgary

Brian Wilson, PhD
Princess Margaret Hospital – UHN

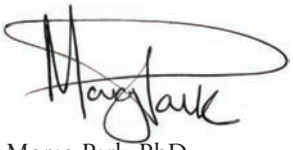
MESSAGE FROM THE SCIENTIFIC PROGRAM COMMITTEE CO-CHAIRS

Welcome to the first Canadian Cancer Research Conference!

As Scientific Program Committee Co-Chairs, we are certain you will find this to be an exciting and interesting program covering a wide array of advances in cancer research. Researchers from basic, clinical, population and policy science will find symposia reflective of their interests, and the plenary sessions will bring us all up to date on important emerging topics across the entire spectrum of cancer research. The Program Committee worked hard not only to invite topnotch speakers for the plenary and symposia topics, but also to review the more than 500 submitted abstracts to create oral, poster, and poster discussion sessions where we hope there will be an opportunity for conference participants to meet each other, network and foster new collaborations within and between disciplines.

This is a most exciting time for cancer research in Canada where our collective work is generating new prevention, detection, treatment and supportive care management strategies for cancer patients. We anticipate that this first Canadian Cancer Research Conference will sow the seeds of further progress.

We hope you find this conference stimulating and that it will lead to new ideas and new collaborations!



Morag Park, PhD
McGill University & CIHR Institute of Cancer Research

David Malkin, MD, FRCP(C), FAAP
The Hospital for Sick Children

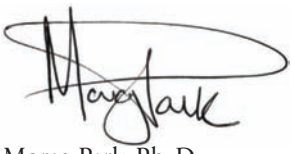
MESSAGE DES COPRÉSIDENTS DU COMITÉ DU PROGRAMME SCIENTIFIQUE

Bienvenue à la première Conférence canadienne sur la recherche sur le cancer !

En tant que coprésidente et coprésident du comité du programme scientifique, nous sommes convaincus que ce programme comblera vos attentes et que vous le trouverez passionnant et intéressant. Vous constaterez qu'il couvre de nombreux champs d'expertise où des progrès importants ont été accomplis dans la recherche sur le cancer. Les nombreux symposiums sauront susciter l'intérêt des scientifiques œuvrant en recherche fondamentale, clinique et populationnelle tout comme celui des spécialistes de la science appliquée aux politiques de santé. Les séances plénières vous informeront sur les thèmes de recherche qui se développent présentement, tout en vous mettant à jour dans tous les domaines de la recherche sur le cancer. Le Comité responsable du programme scientifique s'est surpassé afin de non seulement inviter des conférenciers de calibre international pour chaque symposium et séance plénière, mais a aussi eu la tâche ingrate d'examiner plus de 500 résumés afin de sélectionner ceux qui seront présentés en affiche, dans les séances orales ou lors de séances de discussion. Nous espérons que ces différents forums deviendront des lieux qui permettront à chaque participant de se rencontrer, d'interagir et d'établir de nouvelles collaborations non seulement dans des domaines connexes, mais aussi de façon interdisciplinaire.

Nous pouvons tous ressentir l'excitation que cause présentement la recherche sur le cancer au Canada, car de par nos collaborations, nous sommes en train d'établir des nouvelles stratégies pour prévenir, détecter, traiter et améliorer les soins de soutien pour les patients atteints de cancer. Nous prévoyons que cette première Conférence canadienne sur la recherche sur le cancer sera le point de départ de progrès encore plus importants.

Nous espérons que cette conférence vous stimulera, vous donnera de nouvelles idées et vous permettra d'établir de nouvelles collaborations !



Morag Park, Ph. D.
Université McGill et
IRSC – Institut du cance

David Malkin, M.D., FRCP(C), FAAP
The Hospital for Sick Children

COMITÉ DU PROGRAMME SCIENTIFIQUE

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The Hospital for Sick Children

Morag Park, Ph. D. (Coprésidente)
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McMaster University

Gerald Batist, M.D.
Université McGill

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BC Cancer Agency

Daniel Rayson, M.D.
Dalhousie University

Stephen Robbins, Ph. D.
University of Calgary

Brian Wilson, Ph. D.
Princess Margaret Hospital – UHN

Sunday, November 27

DAYTIME	Open and Closed Satellite Meetings (for details go to page 7)
5:00 p.m.	**Opening Plenary**
6:30 p.m.	Welcome Reception

Monday, November 28

MORNING	Open and Closed Satellite Meetings (for details go to page 11)				
9:00 a.m.	**Plenary Session: Personalized Medicine to Population-Based Strategies**				
11:30 a.m.	LUNCH CIHR-ICR New Principal Investigator Poster Session (S)				
1:00 p.m.	CONCURRENT SYMPOSIA A				
	Metabolic Disorders	Biological Adapted Therapy: Lessons Learned from Prostate and Breast Cancer	Environment and Cancer	Patient-Reported Outcomes and Cancer Care – Examples from Across the Cancer Care Continuum	Progress and Challenges in Breast Cancer
2:30 p.m.	BREAK				
2:45 p.m.	**Plenary Session: Future of Cancer Research: An International Perspective**				
4:00 p.m.	Poster Session 1 (A–H)				
5:30 p.m.	Poster Discussion Sessions 1				
EVENING	Open and Closed Satellite Meetings (for details go to page 11)				

Tuesday, November 29

MORNING	Open and Closed Satellite Meetings (for details go to page 23)				
8:30 a.m.	CONCURRENT SYMPOSIA B				
	Clinical Trials Showcase	Cancer Cohorts: Their Promise and Delivery	Cancer Initiating Cells	Tackling Complex Problems with Simple Organisms	Effective Cancer Systems
10:00 a.m.	BREAK				
10:30 a.m.	**Plenary Session: Screening and Early Detection**				
12:00 p.m.	LUNCH				
12:45 p.m.	**Plenary Session: Prevention: From SNPs to Policy**				
2:15 p.m.	BREAK				
2:30 p.m.	CONCURRENT SYMPOSIA C				
	Emerging Therapeutics: Detect, Decide and Destroy	Personalized Medicine: From Discovery and Validation to Implementation	Cancer Sans Frontiers: Canada's Role in the Global War on Cancer	Palliative/End-of-Life Care	Tumour Microenvironment
4:00 p.m.	Poster Session 2 (I–R)				
5:30 p.m.	Poster Discussion Sessions 2				
6:30 p.m.	**Awards Dinner and Guest Presentation**				

Wednesday, November 30

MORNING	Open and Closed Satellite Meetings (for details go to page 39)			
8:30 a.m.	**Plenary Session: Survivorship: The Next Frontier of Cancer Research**			
10:00 a.m.	BREAK			
10:15 a.m.	CONCURRENT SYMPOSIA D			
	The Optics of Omics	Canadian Cancer Prevention Research Strategy	Personalized Medicine: Education, Ethics and Economics	Emerging Therapeutics: Drugs
11:45 a.m.	BREAK			
12:00 p.m.	**Plenary Session: New Frontiers in Cancer Research**			
1:30 p.m.	Conference Closing Remarks			

SUNDAY, NOVEMBER 27, 2011

EVENT LOCATIONS

8:30 a.m.	Introduction to Bioinformatics for Cancer Genomics Workshop [PRE-REGISTRATION]	Civic Ballroom North
9:00 a.m.	Optimizing Knowledge Use to Improve Cancer Care Quality and System Performance – Workshop [PRE-REGISTRATION]	Conference Room B
12:30 p.m.	CCRA Community Forum	Essex Ballroom
4:00 p.m.	Face-to-Face Meeting of the Canadian Pediatric Cancer Genome Consortium (CPCGC) Project [INVITE ONLY]	Cosmopolitan Room
5:00 p.m.	Opening Plenary	Osgoode Ballroom
6:30 p.m.	Welcome Reception	Sheraton Hall EF

DETAILED AGENDA – SUNDAY, NOVEMBER 27, 2011

8:30 a.m.

INTRODUCTION TO BIOINFORMATICS FOR CANCER GENOMICS WORKSHOP

OICR Ontario Institute for Cancer Research

bioinformatics.ca

Cancer research has rapidly incorporated high-throughput technologies. As a result, large amounts of cancer genome data are becoming publically available through various portals (e.g., ICGC, TCGA, etc.). Beginning with a discussion of the importance of understanding a tumour's genome and an overview of the technologies being used to generate genomic data, this workshop will focus on how to access cancer genome data, and how to visualize and evaluate cancer genomic data sets. Participants will gain hands-on training on the databases, visualization and pathway analysis tools necessary to evaluate cancer genome data.

Registration for this workshop is now closed.

9:00 a.m.

OPTIMIZING KNOWLEDGE USE TO IMPROVE CANCER CARE QUALITY AND SYSTEM PERFORMANCE – WORKSHOP

CANADIAN PARTNERSHIP AGAINST CANCER / PARTENARIAT CANADIEN CONTRE LE CANCER

The Capacity Enhancement Program (CEP) of the Canadian Partnership Against Cancer is pleased to offer a satellite workshop on knowledge translation and exchange (KTE). KTE is a broad area of research and practice that focuses on all the steps between the creation of new knowledge and its application in order to improve outcomes for individuals, patients and the health care system.

Beginning with key foundations in KTE, this workshop will focus on practical aspects of KTE and effective strategies and models that can be used to facilitate quality improvement in cancer control, with a particular focus on the Knowledge to Action Cycle. Using collaborative breakout sessions and problem-based participatory activities, participants will get hands-on experience and develop concrete skills.

This workshop would appeal to clinical leaders, guideline developers and methodologists, researchers interested in getting research into practice, project managers, and administrative leaders who are responsible for promoting the use of knowledge and evidence to improve outcomes for individuals, patients and the health care system.

Registration for this workshop is now closed.

12:30 p.m.

CCRA COMMUNITY FORUM

The Canadian Cancer Research Conference

community forum

An afternoon with Canada's leading cancer researchers

The CCRA Community Forum, for volunteers and staff of CCRA members as well as the general public, showcases important research being funded by Canadian organizations. Presenters are leaders in their respective fields and will share information on achievements in the areas of prevention, screening and treatment. They will also provide a glimpse into the future of cancer research and exciting advancements on the horizon.

Open to all. Registration is encouraged.

4:00 p.m.

FACE-TO-FACE MEETING OF THE CANADIAN PEDIATRIC CANCER GENOME CONSORTIUM (CPCGC) PROJECT

The Canadian Pediatric Cancer Genome Consortium (CPCGC) is a collaborative national consortium of clinicians and scientists formed to take advantage of the recent breakthroughs in technologies and harness the power of next generation sequencing (NGS). Members of the consortium are representatives from each of the 17 Canadian Pediatric Cancer Centres (C17) and are recognised world leaders in their specialities with an established track record in the investigation and/or the treatment of pediatric cancer. The purpose of the consortium is: i) to identify and promote projects where use of NGS and other technologies can advance knowledge, care and outcome in pediatric cancers across Canada; ii) facilitate interactions between project leaders, sequencing platforms and biostatisticians to utilise the massive potential of NGS and elucidate the role in cancer of sequence variants in tumour and normal genomes; iii) facilitate translation of research to the bedside and knowledge transfer to the public and scientists in the field.

This session is closed.

5:00–6:30 p.m.

OPENING PLENARY

Chair:
Dr. Elizabeth Eisenhauer
Canadian Partnership Against Cancer/Canadian Cancer Research Alliance

5:00 p.m. **WELCOME AND INTRODUCTION TO THE MEETING**
Dr. Elizabeth Eisenhauer

5:20 p.m. **GREETINGS AND WELCOME FROM SOME KEY CONFERENCE SUPPORTERS**

Dr. Colin Carrie
Parliamentary Secretary to the Minister of Health

Dr. Tom Hudson
Ontario Institute for Cancer Research

Mr. Peter Goodhand
Canadian Cancer Society

Mr. Steve Jones
Prostate Cancer Canada

5:40 p.m. **INTRODUCTION TO CCRA AWARDS FOR EXCELLENCE**
Dr. Elizabeth Eisenhauer

5:45 p.m. **CCRA AWARD FOR EXCEPTIONAL LEADERSHIP IN CANCER RESEARCH – DR. PHILIP E. BRANTON**
Citation and introduction by Dr. Morag Park, Co-Chair, Scientific Program Committee.

Dr. Philip E. Branton

Phil Branton obtained his PhD in 1972 in the Department of Medical Biophysics at the Ontario Cancer Institute, University of Toronto. Following post-doctoral studies at MIT with Phil Robbins he became an Assistant Professor at the Université de Sherbrooke, then moved in 1975 to the Cancer Research Group at McMaster University where he ultimately became Professor of Pathology and the Group's Coordinator. He moved to McGill University as Chair of Biochemistry (1990-2000), and in 1996 was named Gilman Cheney Professor. In 2000 he was named the inaugural Scientific Director of the Institute of Cancer Research of the Canadian Institutes of Health Research. Honours include being made a Fellow of the Royal Society of Canada in 2002 and in 2005 being awarded the R.M. Taylor Medal from the Canadian Cancer Society and the National Cancer Institute of Canada. He chairs the International Advisory Board of the University Hospital Network (Toronto) and the Scientific Advisory Committee of the Terry Fox Research Institute and is founder and a past Chair of the Canadian Cancer Research Alliance and past Chair of the Research Action Group of the Canadian Partnership Against Cancer. He was co-founder of GeminX Biotechnologies Inc. of Montreal, which had two anti-cancer drugs in the clinic and was sold recently to Cephalon. He is well known internationally for basic research on human adenoviruses, cell death, protein degradation and tumour suppressors.

6:00 p.m. **CCRA AWARD FOR OUTSTANDING ACHIEVEMENTS IN CANCER RESEARCH – DR. ANTHONY J. PAWSON**
Citation and introduction by Dr. David Malkin, Co-Chair, Scientific Program Committee.

Dr. Anthony J. Pawson

Dr. Tony Pawson is a Distinguished Scientist at the Samuel Lunenfeld Research Institute of Mount Sinai Hospital, and Professor in the Department of Molecular Genetics at the University of Toronto. Dr. Pawson was an undergraduate at the University of Cambridge, England, obtained his PhD from the University of London/Imperial Cancer Research Fund, and did postdoctoral work at the University of California, Berkeley. From 1980–1985 he was an Assistant Professor at the University of British Columbia, and he has been in Toronto since 1985.

Dr. Pawson's lab is interested in the mechanisms by which cells convert an external signal into an intracellular response, and in the molecular principles underlying cellular organization. In particular, he has introduced the notion that cellular proteins are constructed in a modular fashion of functional domains, many of which mediate specific protein-protein interactions. He identified the SH2 domain as the prototypic interaction module, which controls signaling by tyrosine kinases through its ability to recognize phosphotyrosine-containing motifs. He is interested in the broader applications of this concept for the regulation of cellular behaviour in normal and disease states. In particular, his work has underpinned our understanding of the mechanisms by which cancer-causing oncoproteins can re-wire cellular signaling networks to induce inappropriate cell growth and movement, and has revealed new approaches to targeted therapy.

Dr. Pawson is a Fellow of the Royal Societies of London and Canada, a Foreign Member of the National Academy of Sciences, and an Associate Member of EMBO. He has received a number of awards, including the Robert L. Noble Prize, the AACR/Pezcoller Prize, the Heineken Prize, the Royal Medal of the Royal Society of London, the Killam Award, the J. Allyn Taylor Prize, the Louisa Gross Horwitz Prize, the Wolf Prize in Medicine, and the Kyoto Prize in Basic Science. He is an Officer of the Order of Canada, and has been appointed to the Order of Companions of Honour by Queen Elizabeth II.

6:15 p.m. **CLOSING REMARKS**
Dr. Mario Chevrette, Co-Chair, CCRA

6:30 p.m.

WELCOME RECEPTION

MONDAY, NOVEMBER 28, 2011

EVENT LOCATIONS

7:00 a.m.	The CIHR Institute of Cancer Research New Principal Investigators Meeting Breakfast Session [INVITE ONLY]		Essex Ballroom
7:00 a.m.	Terry Fox Research Institute (COEUR Project) [INVITE ONLY]		Gingersnap Room
7:30 a.m.	Expanding the Capacity for Population-Based Cancer Research in Ontario [OPEN]		Civic Ballroom South
8:00 a.m.	Report Card on Cancer Clinical Trials – Results and Recommendations of a CCRA Analysis [OPEN]		Civic Ballroom North
9:00 a.m.	**Plenary Session: Personalized Medicine to Population-Based Strategies**		Osgoode Ballroom
11:30 a.m.	LUNCH		Sheraton Hall D & E, Essex Ballroom Foyer
11:30 a.m.	CIHR-ICR New Principal Investigator Poster Session (S) [OPEN]		Windsor Room
1:00 p.m.	CONCURRENT SYMPOSIA A	Metabolic Disorders	Essex Ballroom
		Biological Adapted Therapy: Lessons Learned from Prostate and Breast Cancer	Civic Ballroom South
		Environment and Cancer	Conference Room B & C
		Patient-Reported Outcomes and Cancer Care – Examples from Across the Cancer Care Continuum	Civic Ballroom North
		Progress and Challenges in Breast Cancer	Osgoode Ballroom
2:30 p.m.	BREAK		Sheraton Hall D
2:45 p.m.	**Plenary Session: Future of Cancer Research: An International Perspective**		Osgoode Ballroom
4:00 p.m.	Poster Session 1 (A–H)		Sheraton Hall A-C, F
5:30 p.m.	POSTER DISCUSSION SESSIONS 1	Immunotherapy and Immunomodulation	Osgoode Ballroom
		Metastasis	Civic Ballroom North
		Nanomedicine	Conference Room C
		Programs and Resources	Conference Room B
		Survivorship	Civic Ballroom South
6:00 p.m.	Retirement Reception for Dr. Michael Wosnick [OPEN]		Sheraton Hall E
6:30 p.m.	The CIHR Institute of Cancer Research New Principal Investigators Meeting Dinner and Mock Grant Panel [INVITE ONLY]		Essex Ballroom
6:30 p.m.	Prostate Cancer Canada's Canadian Prostate Cancer Genome Network (CPC-GENE) [INVITE ONLY]		Cosmopolitan Room
7:00 p.m.	Canadian Breast Cancer Foundation Reception and Networking [INVITE ONLY]		Civic Ballroom South

7:00 a.m.

THE CIHR INSTITUTE OF CANCER RESEARCH NEW PRINCIPAL INVESTIGATORS MEETING BREAKFAST SESSION / LE PETIT-DÉJEUNER DE LA RÉUNION DES NOUVEAUX CHERCHEURS PRINCIPAUX

CIHR IRSC
Canadian Institutes of Health Research / Instituts de recherche en santé du Canada

The CIHR Institute of Cancer Research (ICR) is pleased to host the New Principal Investigators Meeting in conjunction with the first Canadian Cancer Research Conference. This meeting is targeted towards new investigators / new faculty members (within their first 5 years of academic appointment) at Canadian universities, including new scientists and clinician scientists in the cancer research community. The New Principal Investigators Meeting will consist of two breakfast sessions and one evening dinner session that will cover various topics relevant to new investigators. Submitted abstracts have been selected for either oral or poster presentations.

At this breakfast, invited speakers will provide an overview of cancer funding in Canada and discuss career development, work-life balance and the need for collaborators and mentors in running a lab properly.

L'Institut du cancer (IC) des IRSC a le plaisir de présenter la Réunion pour les nouveaux chercheurs principaux conjointement avec la première Conférence canadienne sur la recherche sur le cancer. Cette réunion vise les nouveaux chercheurs membres du corps professoral des universités canadiennes depuis moins de cinq ans, y compris les nouveaux chercheurs et les cliniciens-chercheurs dans la communauté de recherche sur le cancer. La réunion de l'IC comprend deux séances durant le petit-déjeuner et une séance au dîner durant lesquelles plusieurs sujets pertinents aux nouveaux chercheurs seront discutés. Parmi les résumés soumis, il y aura des séances de présentations orales et par affiches.

Durant ce petit-déjeuner, des conférenciers invités donneront un aperçu du financement de la recherche sur le cancer au Canada et discuteront du développement professionnel, de la conciliation travail-vie et de la nécessité d'avoir des collaborateurs et des mentors pour gérer efficacement un laboratoire.

By invitation only.

7:00 a.m.

TERRY FOX RESEARCH INSTITUTE (COEUR PROJECT)

The Terry Fox Research Institute
L'Institut de recherche Terry Fox

Strategic planning meeting for the partnered investigators of the TFRI-funded program "A Pan-Canadian platform for the development of biomarker-driven subtype specific management of ovarian carcinoma".

This is a closed session.

7:30 a.m.

EXPANDING THE CAPACITY FOR POPULATION-BASED CANCER RESEARCH IN ONTARIO

The Ontario Health Study, the Ontario Cancer Study, Cancer Care Ontario and the Ontario Patient Reported Outcomes of Symptoms and Toxicity (ONPROST) are working in partnership to support cutting edge cancer research by creating an integrated research platform. Collectively, these programs will provide the infrastructure for a range of epidemiological, basic science, clinical, and health services studies. These resources will also provide the basis for Canadian international leadership in population-based cancer research.

This session is open to all.

8:00 a.m.

REPORT CARD ON CANCER CLINICAL TRIALS – RESULTS AND RECOMMENDATIONS OF A CCRA ANALYSIS

Canadian Cancer Research Alliance • Alliance canadienne pour la recherche sur le cancer

CANADIAN PARTNERSHIP AGAINST CANCER / PARTENARIAT CANADIEN CONTRE LE CANCER

What is this workshop about? In 2009 the Canadian Cancer Research Alliance (CCRA) consulted with researchers, patients, policy makers, and research funders across Canada as part of the development of the Pan-Canadian Cancer Research Strategy and found that the ability to conduct cancer clinical trials in Canada was under growing threat. This was particularly the case for trials based on ideas developed by the academic sector (i.e., those from cooperative groups). The CCRA also observed that pharmaceutical trials are increasingly moving to Eastern Europe or Asia, where rapid accrual at lower costs is possible. In February 2010 the CCRA established the CCRA Clinical Trials Working Group to examine the trends in clinical cancer research in Canada, to report on the issues identified and to examine models of international clinical trials support. Following an intensive year of data gathering and analysis, a stakeholder meeting met in March 2011 to review the findings and recommendations. The working group confirmed the informal comments from investigators and have made important recommendations which, if enacted will restore and enhance Canada's historic strength in academic cancer trials.

This workshop will review the findings and recommendations of the CTWG and outline how the Canadian Partnership Against Cancer and other agencies involved in cancer research are taking the first steps to act on them.

Who should attend? We especially encourage clinical and basic researchers and others who care about clinical cancer research and how to strengthen it in our cancer centres and hospitals.

This session is open to all.

9:00–11:30 a.m.

PLENARY SESSION

PERSONALIZED MEDICINE TO POPULATION-BASED STRATEGIES

Chairs:
David Malkin
The Hospital for Sick Children, Toronto

Morag Park
McGill University & CIHR Institute of Cancer Research, Montréal

With advances in the recognition of the unique biologic and genetic features of human cancer has come the hope to more accurately target tumours in individual patients. Lessons learned from this personalization of therapy may then be adapted for larger populations. This session will highlight the major advances that have been made in refining genetic biomarkers of cancer. The speakers will expand on how innovative approaches are being used to harness this information to develop novel treatment approaches. The session will begin with an examination of one of the most spectacular journeys from discovery of a cancer-causing virus, to the global implementation of effective prevention strategies. The emerging potential of unravelling the genetic and genomic basis of cancer to inform more refined targeted therapies will be discussed in the context of high-throughput, high-resolution platforms in a broad cancer context. The session will be rounded out with a perspective on the elements of success in one of the greatest achievements of cancer therapy – the childhood leukemia story. The breadth of work covered in this session will highlight the interface of study design and discovery in personalized and population-based medicine.

9:00 a.m.

FROM DISCOVERY TO PREVENTION: A TIMELINE OF RESEARCH ON CERVICAL CANCER CONTROL

Eduardo Franco
McGill University, Montréal

One of the greatest cancer research advances of the past 20 years has been the accrued evidence that human papillomavirus (HPV) infection is a necessary cause of cervical cancer. This discovery has led to new prevention strategies against cervical cancer: immunization against HPV and screening for cervical cancer precursors with HPV testing. Prophylactic vaccines against HPVs 16 and 18 are now available for adolescent and young adult women. Made from viral capsid proteins, these vaccines induce strong antibody response and have been proven to be safe and nearly 100% efficacious in preventing the development of persistent infections and cervical precancerous lesions associated with the above HPV types. Universal pre-exposure HPV vaccination has the potential to reduce cervical cancer incidence by up to 75% and thus screening will continue to be needed. Vaccination is expected to have an impact on the rate of cervical cytological abnormalities and of diagnostic and treatment procedures required to manage women with such precancerous lesions. The traditional paradigm of Pap cytology screening may not be a suitable preventive strategy in the era of HPV vaccination. Once the cohorts of young women who are being vaccinated reach the age of screening the prevalence of Pap smear-detectable abnormalities will decrease substantially, which will ultimately affect the positive predictive value of cytology and decrease its cost-effectiveness. However, a solution already exists. It is now widely accepted that testing cervical exfoliated cells for nucleic acid of carcinogenic HPVs is a much more sensitive screening tool than cytology to detect precancerous cervical lesions and cervical cancer. Cytologic triage of HPV-positive women can reveal the ones that should undergo colposcopic examination and biopsy and will largely obviate the concerns related to false-positives. With the improved sensitivity to detect existing lesions and the more "upstream" focus on cervical carcinogenesis this strategy could be implemented via longer screening intervals than are currently possible with cytology alone, and thus be cost-saving. However, it is in the post-vaccination era when the cohorts of women vaccinated in their teens enter screening age that this approach may prove most valuable by permitting a surveillance system that can serve two roles simultaneously: monitoring duration of vaccine protection and screening for cervical cancer.

9:35 a.m.

THE GENETIC BASIS FOR CANCER TREATMENT DECISIONS

Tom Hudson
Ontario Institute for Cancer Research, Toronto

Personalized cancer medicine is based on a rapidly emerging knowledge of the cancer mutation repertoire, the unique patterns of mutations in human tumours that are continually evolving and the increased availability of anti-cancer agents that target altered genes or pathways. Transforming actionable mutations into actionable cancer gene panels is an important step toward using comprehensive molecular analysis of tumours in the clinical setting to help guide physicians in selecting therapies. Given advances in cancer genetics, technology and therapeutics development, the timing is right to develop a clinical trials and research framework that may benefit patients and also build a long-term repository of knowledge linking mutation profiles with clinical interventions and outcomes, such that future clinical decisions can move from heuristic to evidence-based decisions.

In my presentation, I will present concepts and experiences gained from a pilot study involving patients with advanced metastatic cancers from five cancer centers in Ontario who are potential candidates for early phase clinical trials of targeted agents. The study includes rapid mutation detection in a set of genes deemed to be actionable, validation in a clinical molecular diagnostics laboratory, and reporting of actionable mutations to clinicians and patients.

10:10 a.m.

FROM NEXT GENERATION SEQUENCING TO NEXT GENERATION CANCER CONTROL

David Huntsman
BC Cancer Agency, Vancouver

Although the clinical and economic drivers to personalize cancer control decisions have been recognized for decades, cancer prevention, screening and treatment decisions are largely generic or minimally stratified. Recently, a massive change in the capacity to interrogate tumour and germline nucleic acids has spawned both a major shift of our understanding of the mutational basis of cancer and raised the opportunity to provide a much deeper level of interrogation of tumour and germline within clinical research and ultimately within our cancer care systems. These technologies collectively to be known as next generation sequencing have produced the first detailed delineations of cancer landscapes. These show that although cancers are more complicated than imagined there are recurrent mutations across many cancer sites many of which are outside the canonical signaling pathways that have been the focus of much of our cancer research efforts. In addition the mutational basis for a treatment-opportunity based taxonomy of cancer is starting to emerge. This presentation will show how these technologies are already reshaping our understanding of many cancers and can be immediately applied in the cancer susceptibility and clinical trials settings. Ultimately the ready accessibility of high quality genomic information will underpin many cancer and other disease control decisions and the incorporation of these genomic technologies into standard care raises broad ranging challenges and research opportunities.

10:45 a.m.

TOWARD THE CURE OF CHILDHOOD ACUTE LYMPHOBLASTIC LEUKEMIA WITH PERSONALIZED THERAPY

Ching-Hon Pui
St. Jude Children's Research Hospital & University of Tennessee Health Science Center, Memphis

With the cure rates of 80% or more achieved in childhood acute lymphoblastic leukemia (ALL), current research focuses on personalized therapy based on leukemic cell genetics, host pharmacogenetics, precise risk assessment by measurement of minimal residual disease, and more rationale selection of donor for those who need transplantation to improve not only the cure rates but also the quality of life of patients. Recent genome-wide analyses have identified several novel subtypes of ALL. Our recent global transcriptional profiling and whole genome sequencing analyses have identified mutational spectrum of early T-cell precursor ALL, a newly identified subset of ALL with immature immunophenotypic features and a dismal prognosis, recapitulated that of myeloid leukemia, suggesting that the addition of myeloid-directed therapy might improve outcome of this subgroup of patients. Several new high-risk genetic abnormalities have been identified in B-cell precursor ALL: deletion or mutation of IKZF1 deletion, JAK mutation, CRLF2 rearrangement, CREBBP mutations, and ERG deletion. These findings have led to a Phase 1 trial with JAK inhibitor. Recent studies have linked host pharmacogenomic variations not only with drug exposure, adverse effects, and efficacy of antileukemic therapy but also with leukemogenesis. High-risk leukemic cell genetic abnormality per se is no longer used as an indication for transplantation because of recent recognition of considerable heterogeneity within specific genotypes due to a combination of variables, including secondary cooperating mutations, developmental stage of the target cells undergoing malignant transformation, and host pharmacodyamics and pharmacogenetics, as well as improvement in chemotherapy. For example, patients with the Philadelphia chromosome and BCR-ABL1 fusion are now treated with intensive chemotherapy plus tyrosine kinase inhibitor and transplantation is reserved for those with high levels of residual disease after induction therapy or relapse. Once regarded as an absolute indication for transplantation, remission induction failure is also recognized to be a highly heterogeneous condition such that the subset of patients with B-cell precursor phenotype without other adverse features should be treated with chemotherapy only. Finally, for patients who need transplantation, we have improved the efficacy and decrease transplant-related toxicity by selecting donor with natural killer cells that express killer-cell immunoglobulin receptors in the absence of ligand in the recipient.

11:30 a.m.

LUNCH

CIHR-ICR NEW PRINCIPAL INVESTIGATOR POSTER SESSION (POSTERS S)

Windsor Room – *open to all.*

1:00 p.m.

CONCURRENT SYMPOSIA – A

1:00–2:30 p.m.

A1 – METABOLIC DISORDERS

The Terry Fox Research Institute
L'Institut de recherche Terry Fox

Chair:
Tak Mak
Princess Margaret Hospital, Toronto

Changes in cellular metabolism contribute to the development and progression of cancer in multiple different ways. Some of these metabolic changes are as a result of cell-autonomous mechanisms such as oncogenic mutations. However recent evidence supports that obesity is associated with increased risk for several types of cancer, with percentage of cases attributable to overweight and obesity in the United States and Europe estimated at over 20% and up to 40%–60% for both endometrial and esophageal cancers. Several mechanisms have been proposed to explain the link between metabolic disease and cancer.

1:00 p.m. **METABOLIC REGULATION BY THE AMP-ACTIVATED PROTEIN KINASE (AMPK): IMPLICATIONS FOR CANCER BIOLOGY**
Russell Jones
McGill University, Montréal

1:20 p.m. **TARGETING TUMOUR METABOLISM FOR ANTI-CANCER THERAPIES: CAN IT BE DONE?**
Tak Mak
Princess Margaret Hospital, Toronto

1:40 p.m. **REGULATION OF METABOLIC PATHWAYS TO SUPPORT CANCER PROLIFERATION**
Matthew Vander Heiden
Koch Institute for Integrative Cancer Research at Massachusetts Institute of Technology & Dana-Farber Cancer Institute, Boston

2:00 p.m. **TARGETING METABOLISM DIFFERENCES IN CHRONIC LYMPHOCYTIC LEUKEMIA (CLL)**
Veronica L. Martinez-Marignac
LDI and Segal Cancer Centre, Jewish General Hospital & McGill Centre for Translational Research in Cancer, Montréal

2:15 p.m. **HYPOXIA INHIBITS DISULFIDE BOND FORMATION AND PROTEIN FOLDING IN THE ENDOPLASMIC RETICULUM**
Marianne Koritzinsky
Ontario Cancer Institute & Princess Margaret Hospital, Toronto

1:00–2:30 p.m.

A2 – BIOLOGICAL ADAPTED THERAPY: LESSONS LEARNED FROM PROSTATE AND BREAST CANCER

Canadian Breast Cancer Foundation | Fondation canadienne du cancer du sein

Prostate Cancer Canada

Chairs:
Robert Bristow
Ontario Cancer Institute, Princess Margaret Hospital, University of Toronto, STTARR Innovation Facility, Toronto

Brian Wilson
Princess Margaret Hospital, Toronto

This symposium will highlight new high-throughput imaging and predictive technologies designed to adapt cancer treatment to response markers for an individual patient with breast or prostate cancer. Functional imaging based on MRI, CT, PET and optical approaches all hold promise of providing serial and complex imaging of tumour anatomy, metabolism and gene expression. High-throughput diagnostic biosensor chips could revolutionize the rapid assessment of DNA, RNA and protein biomarkers for treatment response. Similarly, new microscopy and cell-based techniques could utilize the genomics and DNA repair status of patient-derived biopsies to adapt therapy to an individual patient.

But are these novel technologies really solving current limitations in cancer medicine and clinical trial design? Or are instead documenting increasing tumour heterogeneity and complexity that precludes implementing these technologies in busy cancer treatment settings? How do we measure the success of these technologies as aids in personalized medicine relative to current practice? How far away are these technologies from point-of care tests in the hospital setting? Using practical examples of prostate cancer and breast cancer scenarios and active audience participation, this Symposium will attempt to answer these questions.

1:00 p.m. **GENOMIC PREDICTION OF PROSTATE CANCER TREATMENT RESPONSE**
Robert Bristow
Ontario Cancer Institute, Princess Margaret Hospital, University of Toronto & STTARR Innovation Facility, Toronto

1:10 p.m. **SPORADIC BREAST CANCERS SHOW DEFECTS IN THE BRCA1-BRCA2 PATHWAY OF HOMOLOGOUS RECOMBINATION IN ALL BIOMARKER-DEFINED SUB-TYPES OF BREAST CANCER**
Simon Powell
Memorial Sloan-Kettering Cancer Center, New York

1:30 p.m. **BIO-GUIDED TREATMENT: INCREASED CONTROL AND TOXICITY REDUCTION IN PROSTATE RADIOTHERAPY**
David Jaffray
Princess Margaret Hospital & University of Toronto, Toronto

1:50 p.m. **MICROCHIP DEVICES FOR CANCER BIOMARKER ANALYSIS**
Shana Kelley
University of Toronto, Toronto

2:10 p.m. **MRI DETECTION OF NONPROLIFERATIVE TUMOUR CELLS IN LYMPH NODE METASTASES USING IRON OXIDE PARTICLES IN MOUSE BREAST CANCER MODEL**
Vasiliki Economopoulos
Robarts Research Institute & The University of Western Ontario, London

1:00–2:30 p.m.

A3 – ENVIRONMENT AND CANCER

Cancer Research Society | Société de recherche sur le cancer

Chairs:
John McLaughlin
Samuel Lunenfeld Research Institute & Dalla Lana School of Public Health, University of Toronto, Toronto

Jack Siemiatycki
Université de Montréal, Montréal

This symposium focuses on the discovery and characterization of environmental factors that are associated with cancer incidence and mortality in Canada. Sessions provide examples of progress made in this field in Canada, highlighting four areas in which Canadian investigators have contributed to advancing the understanding of environmental effects. The session also discusses and raises awareness of challenges that exist for research in this area, but demonstrates ways by which Canadian researchers can make unique and important contributions in studies of the role of the environment in cancer etiology.

1:06 p.m. **DO CELL PHONES CAUSE BRAIN CANCER?**
Jack Siemiatycki
Université de Montréal, Montréal

1:27 p.m. **ULTRAVIOLET RADIATION AND CANCER: AN ETIOLOGIC JOURNEY**
Loraine Marrett
Cancer Care Ontario, Toronto

1:48 p.m. **ORGANOCHLORINE EXPOSURE AND RISK OF CANCER**
John Spinelli
BC Cancer Agency & University of British Columbia, Vancouver

2:09 p.m. **WOOD DUST EXPOSURE AND RISK OF CANCER**
Paul Demers
Cancer Care Ontario, Toronto

1:00–2:30 p.m.

A4 – PATIENT-REPORTED OUTCOMES AND CANCER CARE – EXAMPLES FROM ACROSS THE CANCER CARE CONTINUUM

CCRA ACRC
Canadian Cancer Research Alliance • Alliance canadienne pour la recherche sur le cancer

Chair:
Michael Brundage
Kingston Regional Cancer Centre & Queen's University, Kingston

Patient-reported outcomes (PROs), including health-related quality of life measures (QOL), have a critical role in cancer control research. A PRO is generally defined as "any report of the status of a patient's health condition that comes directly from the patient, without interpretation of the patient's response by a clinician or anyone else". As such, PROs represent a wide variety of outcome measures, including symptom measurement, quality of life evaluations, satisfaction with care, assessment of depression, and other domains. PROs are measured with PRO instruments – questionnaires that have been validated to assess the target domain(s) of interest. The overall objective of this symposium is to present a variety of internationally recognized psychosocial research and clinical applications – led by Canadian investigators – which collectively illustrate some roles of PROs in cancer control. The symposium will include a brief overview of PROs and QOL outcome measurement followed by four presentations summarizing, respectively: a review on screening for symptom distress in cancer patients, a research program illustrating an intervention for insomnia, a description of the ways that QOL data can add value to randomized clinical trials, and an illustration of what factors influence the QOL of partners of cancer patients.

1:05 p.m. **SCREENING FOR DISTRESS, THE 6TH VITAL SIGN IN CANCER CARE**
Linda Carlson
University of Calgary, Calgary

1:19 p.m. **CANCER-RELATED INSOMNIA: FROM EPIDEMIOLOGY TO THE DISSEMINATION OF EFFECTIVE TREATMENT**
Josée Savard
Université Laval, Québec

1:33 p.m. HOW DOES QUALITY OF LIFE MEASUREMENT ADD VALUE TO WHAT IS LEARNED FROM CANCER CLINICAL TRIALS?
Jolie Ringash
Princess Margaret Hospital, Toronto

1:47 p.m. INFLUENCE OF HOPE ON THE QUALITY OF LIFE OF MALE SPOUSES OF PARTNERS WITH BREAST CANCER
Wendy D. Duggleby
University of Alberta, Edmonton

2:01 p.m. Discussion Period

1:00–2:30 p.m.

A5 – PROGRESS AND CHALLENGES IN BREAST CANCER

Canadian Breast Cancer Foundation | Fondation canadienne du cancer du sein TM/MC

Chair:
Ann Chambers
London Regional Cancer Program, London

Much research progress has been made in breast cancer over the past several decades. Survival rates for breast cancer patients have steadily improved, due in part to earlier detection as well as improved therapies, often targeted to specific molecular features of individual tumours. However, significant challenges still remain, especially for patients with metastatic breast cancer. Breast cancer that is detected before it has spread can be successfully treated much more readily than can breast cancer that has progressed to metastatic disease. This session will highlight some of the research advances that have been made in understanding breast cancer progression, and discuss some of the remaining challenges in further improving breast cancer survival.

1:05 p.m. GENOMIC LANDSCAPE OF BREAST CANCERS
Samuel Aparicio
BC Cancer Agency, Vancouver

1:30 p.m. LOSS OF 14-3-3σ TUMOUR SUPPRESSOR IS A CRITICAL EVENT IN ErbB2-MEDIATED TUMOUR PROGRESSION
William Muller
McGill University, Montréal

1:55 p.m. ROLE OF ALDH^{hi}CD44^{+} STEM-LIKE CELLS IN BREAST CANCER METASTASIS AND TREATMENT
Alison Allan
London Regional Cancer Program & University of Western Ontario, London

2:20 p.m. Discussion Period

2:30 p.m.

BREAK

2:45–4:00 p.m.

PLENARY SESSION

FUTURE OF CANCER RESEARCH: AN INTERNATIONAL PERSPECTIVE

Chairs:
Alan Bernstein
University of Toronto, Toronto

Benjamin G. Neel
Ontario Cancer Institute, Princess Margaret Hospital & University of Toronto, Toronto

The past thirty years have witnessed an exponential increase in our understanding of the molecular and cellular basis of human cancers. This plenary symposium focuses on the key challenges for the future: how to transform the clinical trials effort to align with this new science, how to involve the developing world in cancer research and its benefits, and how to translate these new insights into new directions in cancer prevention, early diagnosis and therapy. Dr. Harold Varmus, the Director of the U.S. National Cancer Institute, will discuss the strategy and future directions of the US NCI. Dr. René Bernards of the Netherlands Cancer Institute will provide a European perspective of the future of cancer research.

2:45 p.m.

NEW DIRECTIONS AT THE U.S. NATIONAL CANCER INSTITUTE

Harold Varmus
National Cancer Institute, Bethesda

Harold Varmus, co-recipient of the Nobel Prize for studies of the genetic basis of cancer, became Director of the National Cancer Institute on July 12, 2010, after 10 years as President of Memorial Sloan-Kettering Cancer Center and six years as Director of the National Institutes of Health. He is a member of the U.S. National Academy of Sciences and the Institute of Medicine and is involved in several initiatives to promote science and health in developing countries. The author of over 350 scientific papers and five books, including a recent memoir titled The Art and Politics of Science, he was a co-chair of President Obama's Council of Advisors on Science and Technology, was a co-founder and Chairman of the Board of the Public Library of Science, and chaired the Scientific Board of the Gates Foundation Grand Challenges in Global Health.

3:20 p.m.

THE FUTURE OF CANCER TREATMENT: A EUROPEAN PERSPECTIVE

René Bernards
Netherlands Cancer Institute, Amsterdam

René Bernards received his PhD in 1984 from the University of Leiden. He joined the laboratory of Robert Weinberg at the Whitehead Institute in Cambridge, USA for his postdoctoral training. Here, he studied the function of both oncogenes and tumour suppressor genes. He continued this work when he joined the Massachusetts General Hospital Cancer Center as an assistant professor in 1988. In 1992 he was appointed senior staff scientist at the Netherlands Cancer Institute. In 1994 he was appointed part time professor of molecular carcinogenesis at Utrecht University, The Netherlands. In the last decade, his laboratory has focused on the development of new tools to carry out genome-wide loss-of-function genetic screens to identify novel genes that act in cancer-relevant pathways. In July of 2003 he co-founded "Agendia", a genomics-based diagnostic company that started offering the first microarray-based diagnostic test for the clinical management of breast cancer in 2004. He received several awards for his research, including the Pezcoller Foundation-FECS Recognition for Contribution to Oncology, the Ernst W. Bertner Award for Cancer Research from the M.D. Anderson Cancer Center, the ESMO Lifetime Achievement Award in Translational Research in Breast Cancer and the Spinoza award from the Netherlands Organization for Scientific Research. He is a member of the Royal Netherlands Academy of Arts and Sciences.

4:00 p.m.

POSTER SESSION 1 (POSTERS A–H)

5:30 p.m.

POSTER DISCUSSION SESSIONS 1*

IMMUNOTHERAPY AND IMMUNOMODULATION
Osgoode Ballroom

Chair:
Jonathan Bramson
McMaster University, Hamilton

C16
Hypoxia Induces Escape from Innate Immunity in Cancer Cells via Increased Expression of ADAM10: Role of Nitric Oxide
Ivraym B. Barsoum
Queen's University, Kingston

C14
Macrophages Are More Potent Immune Suppressors than Myeloid-Derived Suppressor Cells in Mice Bearing 4T1 Metastatic Mammary Carcinomas
Melisa J. Hamilton-Valensky
BC Cancer Agency, Vancouver

C20
T Cells that Infiltrate the Tumour Early Following Therapeutic Vaccination Elicit a Rapid Adaptive Response within the Tumour that Impairs the Activity of Cells that Infiltrate Later
A. J. Robert McGray
McMaster University, Hamilton

C02
NKT Cell Activation Upregulates CXCL16 on Dendritic Cells to Enhance IFN-γ Production and Downstream Anti-Tumour
Linnea L. Veinotte
Dalhousie University, Halifax

C24
Dendritic Cells De-Differentiate into Regulatory Macrophages in Tumours
Jun Diao
University of Toronto & University Health Network, Toronto

METASTASIS
Civic Ballroom North

Chair:
Peter Siegel
McGill University, Montréal

B02
Expression of Carcino-embryonic Antigen Cell Adhesion Molecule 1 Long Isoform (CEACAM1-L) in Metastatic Colorectal Cancer Cells Impedes Liver Colonization and Metastasis
Azadeh Arabzadeh
McGill University, Montréal

S20
Hypoxic Tumour Cells Induce Myeloid-Derived Suppressor Cell Accumulation in Metastatic Target Organs
Kevin L. Bennewith
BC Cancer Agency, Vancouver

B36
FES Tyrosine Kinase Expression in the Tumour Niche Correlates with Enhanced Tumour Growth, Angiogenesis, Circulating Tumour Cells, Metastasis and Infiltrating Macrophages
Peter A. Greer
Queen's University, Kingston

B21
Hypoxic Regulation of DICER1, miRNA, and Their Influence in the Cancer Phenotype
Elizabeth D. Koch
Ontario Cancer Institute & University of Toronto, Toronto

B33
Invadopodia Formation and Microparticle Release Are Required for Cancer Cell Extravasation in vivo
Hon S. Leong
London Regional Cancer Program, London

NANOMEDICINE
Conference Room C

Chair:
Gang Zheng
Ontario Cancer Institute, Toronto

N04
Tumour-Targeted Delivery of Docetaxel Using a Nanoparticle-Assembling Polymer Construct
Shyh-Dar Li
Ontario Institute for Cancer Research, Toronto

N12
pH-Triggered Molecular Drug Carriers
Anne Petitjean
Queen's University, Kingston

D06
A Novel Nanoparticle Formulation Overcomes Multiple Membrane Efflux Transporters and Improves Cytotoxicity of Anticancer Agents in Human Breast Cancer Cells
Preethy Prasad
University of Toronto, Toronto

D07
Nunerical Study of Nano-Particle Drug Delivery to Solid Tumours
Madjid Soltani
University of Waterloo, Waterloo

D05
Active Targeting of Solid Lipid Nanoparticles to Tumour alpha v beta 3 Integrin Receptor
Shirley X. Y. Wu
University of Toronto, Toronto

PROGRAMS AND RESOURCES
Conference Room B

Chairs:
Lois Shepherd
Queen's University, Kingston
Peter Watson
BC Cancer Agency, Victoria

K08
The Breast Imaging Electronic Medical Record and Surveillance System: An Open Source Interprovincial Collaboration
Mohamed Abdolell
Dalhousie University, Halifax

O38
Reactome: A Pathway Database and a Resource for Interpreting Genomic and Proteomic Cancer Datasets
Robin Haw
Ontario Institute for Cancer Research, Toronto

I26
Improving Health through Measurement: The Ontario Patient Reported Outcomes of Symptoms and Toxicity (ON-PROST) Research Unit
Doris Howell
University Health Network & University of Toronto, Toronto

I09
Biobank Certification: Development of a Program by the Canadian Tumour Repository Network (CTRNET)
Brent Schacter
Canadian Tumour Repository Network

SURVIVORSHIP
Civic Ballroom South

Chairs:
Ronald Barr
McMaster University, Hamilton
Eva Grunfeld
Ontario Institute for Cancer Research & University of Toronto, Toronto

E18
Quality of Life and Symptom Change Over Time in Colorectal Cancer Patients
Joseph Donia
Ryerson University, Toronto

E06
Assessing Information and Service Needs of Adolescents and Young Adults (AYA) at a Large Adult Tertiary Care Cancer Centre
Abha Gupta
The Hospital for Sick Children, Toronto

E17
The Childhood, Adolescent and Young Adult Cancer Survivors (CAYACS) Research Program
Mary L. McBride
BC Cancer Agency, Vancouver

E19
Development of Scales to Measure Transition Readiness in Childhood Cancer Survivors
Zahava R. Rosenberg-Yunger
McMaster Children's Hospital, Hamilton

*Alphanumerics denote poster codes as referenced in the Abstract Book.

6:00 p.m.

RETIREMENT RECEPTION FOR DR. MICHAEL WOSNICK

Canadian Cancer Society / Société canadienne du cancer

After almost 20 years with the NCIC and the Canadian Cancer Society, Dr Michael Wosnick is retiring in December.

Michael's contributions to research in Canada include over 30 years of experience encompassing the academic, biotechnology and not-for-profit sectors. Trained as a PhD in molecular biology, Michael held positions at Toronto's Connaught Research Institute and Allelix Biopharmaceuticals before joining the NCIC as director of research programs and eventually assuming oversight for the NCIC as its executive director. In his current role as vice president of research for the Canadian Cancer Society, Michael oversaw the integration of the research portfolio into the organization in 2009 and became the inaugural scientific director of the newly established Canadian Cancer Society Research Institute.

Throughout his accomplished career, Michael has been instrumental in supporting the Canadian cancer research community as it has built an international reputation for excellence. Well known for his engaging and personal speaking style, Michael is a passionate advocate for the value of health research. Through his extensive knowledge and enthusiasm for science, Michael has been particularly effective at building understanding and support for cancer research with public audiences.

Michael's passion and commitment to cancer research and furthering the Society's mission will be missed. Please join us in thanking Michael for his outstanding contributions.

This event is open to all.

6:30 p.m.

THE CIHR INSTITUTE OF CANCER RESEARCH NEW PRINCIPAL INVESTIGATORS MEETING DINNER AND MOCK GRANT PANEL / LE DÎNER ET COMITÉ D'EXAMEN DE SUBVENTIONS FICTIF DE LA RÉUNION DES NOUVEAUX CHERCHEURS PRINCIPAUX

CIHR IRSC
Canadian Institutes of Health Research / Instituts de recherche en santé du Canada

The CIHR Institute of Cancer Research (ICR) is pleased to host the New Principal Investigators Meeting in conjunction with the first Canadian Cancer Research Conference. This meeting is targeted towards new investigators / new faculty members (within their first 5 years of academic appointment) at Canadian universities, including new scientists and clinician scientists in the cancer research community. The New Principal Investigators Meeting will consist of two breakfast sessions and one evening dinner session that will cover various topics relevant to new investigators. Submitted abstracts have been selected for either oral or poster presentations.

During dinner, there will be a focused working session devoted to a mock grant panel, in addition to table discussions led by invited cancer researchers on various topics such as communication and presentation skills, grant writing and management skills.

L'Institut du cancer (IC) des IRSC a le plaisir de présenter la Réunion pour les nouveaux chercheurs principaux conjointement avec la première Conférence canadienne sur la recherche sur le cancer. Cette réunion vise les nouveaux chercheurs membres du corps professoral des universités canadiennes depuis moins de cinq ans, y compris les nouveaux chercheurs et les cliniciens-chercheurs dans la communauté de recherche sur le cancer. La réunion de l'IC comprend deux séances durant le petit-déjeuner et une séance au dîner durant lesquelles plusieurs sujets pertinents aux nouveaux chercheurs seront discutés. Parmi les résumés soumis, il y aura des séances de présentations orales et par affiches.

Durant le dîner, il y aura une séance de travail qui portera spécifiquement sur un comité fictif d'examen de subventions. De plus, des chercheurs désignés à chaque table discuteront de sujets divers dont les techniques de présentation et de communication, la rédaction de subventions et les compétences en gestion.

By invitation only.

6:30 p.m.

PROSTATE CANCER CANADA'S CANADIAN PROSTATE CANCER GENOME NETWORK (CPC-GENE)

Prostate Cancer Canada

Meeting of Prostate Cancer Canada's CPC-GENE Investigators and Steering Committee.

This session is closed.

7:00 p.m.

CANADIAN BREAST CANCER FOUNDATION RECEPTION AND NETWORKING

Canadian Breast Cancer Foundation | Fondation canadienne du cancer du sein

This event is intended as an opportunity for breast cancer researchers and friends of CBCF to come together with peers and collaborators from across the country for some light refreshments, and entertainment provided by CBCF volunteers. Learn about CBCF's plans for continuing to grow its investments in breast cancer research on a pan-Canadian scale. A brief presentation from Ontario Region CEO and National Grants Committee Chair will punctuate an evening of casual networking.

This session is closed.

TUESDAY, NOVEMBER 29, 2011

EVENT LOCATIONS

6:00 a.m.	Terry Fox Research Institute's Betty Fox Tribute Run/Walk [OPEN]		Gingersnap Room
7:00 a.m.	The CIHR Institute of Cancer Research New Principal Investigators Meeting Breakfast Session [INVITE ONLY]		Windsor Room
7:00 a.m.	Canadian Consortium for Survivorship Research [OPEN]		Conference Room B & C
7:00 a.m.	Prostate Cancer Canada's Canadian BRCA1-BRCA2 Prostate Cancer Network [INVITE ONLY]		Cosmopolitan Room
7:30 a.m.	The Canadian Cancer Society's New Research Portfolio [OPEN]		Civic Ballroom North
8:30 a.m.	CONCURRENT SYMPOSIA B	Clinical Trials Showcase	Osgoode Ballroom
		Cancer Cohorts: Their Promise and Delivery	Civic Ballroom North
		Cancer Initiating Cells	Essex Ballroom
		Tackling Complex Problems with Simple Organisms	Civic Ballroom South
		Effective Cancer Systems	Conference Room B & C
10:00 a.m.	BREAK		Sheraton Hall D
10:30 a.m.	**Plenary Session: Screening and Early Detection**		Osgoode Ballroom
12:00 p.m.	LUNCH		Sheraton Hall D, Essex Ballroom Foyer
12:45 p.m.	**Plenary Session: Prevention: From SNPs to Policy**		Osgoode Ballroom
2:15 p.m.	BREAK		Sheraton Hall D
2:30 p.m.	CONCURRENT SYMPOSIA C	Emerging Therapeutics: Detect, Decide and Destroy	Essex Ballroom
		Personalized Medicine: From Discovery and Validation to Implementation	Osgoode Ballroom
		Cancer Sans Frontiers: Canada's Role in the Global War on Cancer	Civic Ballroom North
		Palliative/End-of-Life Care	Conference Room B & C
		Tumour Microenvironment	Civic Ballroom South
4:00 p.m.	Poster Session 2 (I–R)		Sheraton Halls A-C, F
5:30 p.m.	POSTER DISCUSSION SESSIONS 2	Distinct Populations	Conference Room B & C
		Epigenetics	Civic Ballroom North
		Oncolytic Viruses	Essex Ballroom
		Prevention Research	Civic Ballroom South
6:30 p.m.	Awards Dinner and Guest Presentation		Osgoode Ballroom/ Sheraton E

DETAILED AGENDA – TUESDAY, NOVEMBER 29, 2011

6:00 a.m.

TERRY FOX RESEARCH INSTITUTE'S BETTY FOX TRIBUTE RUN/WALK

The Terry Fox Research Institute
L'Institut de recherche Terry Fox

Please Join Us!
Betty Fox Tribute Run/Walk Nov, 29, 2011: Departs 6:00 a.m. sharp from TFRI Hospitality Suite (Gingersnap Room)

TFRI's research community comes together annually during its scientific meeting for an early morning run/walk to honour Terry Fox. This year, we will run/walk in Toronto as a tribute to Terry Fox's mother, Mrs. Betty Fox. Please join your fellow colleagues for this fitting tribute to an amazing woman who was a tireless advocate for cancer research. This fun run / walk will take you from the Hotel through downtown Toronto to the Terry Fox Miracle Mile and back. The full distance is approximately 6 km.

Show your Terry Fox spirit by joining us in this very special run!

Please register online by November 28 at: www.tfri.ca/bettyfox/

Route map: www.tfri.ca/bettyfox/map.pdf

Hot refreshments available at our Hospitality Suite following the run.

7:00 a.m.

THE CIHR INSTITUTE OF CANCER RESEARCH NEW PRINCIPAL INVESTIGATORS MEETING BREAKFAST SESSION / LE PETIT-DÉJEUNER DE LA RÉUNION DES NOUVEAUX CHERCHEURS PRINCIPAUX

CIHR IRSC
Canadian Institutes of Health Research / Instituts de recherche en santé du Canada

The CIHR Institute of Cancer Research (ICR) is pleased to host the New Principal Investigators Meeting in conjunction with the first Canadian Cancer Research Conference. This meeting is targeted towards new investigators / new faculty members (within their first 5 years of academic appointment) at Canadian universities, including new scientists and clinician scientists in the cancer research community. The New Principal Investigators Meeting will consist of two breakfast sessions and one evening dinner session that will cover various topics relevant to new investigators. Submitted abstracts have been selected for either oral or poster presentations.

At this breakfast, invited speakers will provide advice on writing a scientific manuscript and discuss best practices in publishing clinical and public research on cancer.

L'Institut du cancer (IC) des IRSC a le plaisir de présenter la Réunion pour les nouveaux chercheurs principaux conjointement avec la première Conférence canadienne sur la recherche sur le cancer. Cette réunion vise les nouveaux chercheurs membres du corps professoral des universités canadiennes depuis moins de cinq ans, y compris les nouveaux chercheurs et les cliniciens-chercheurs dans la communauté de recherche sur le cancer. La réunion de l'IC comprend deux séances durant le petit-déjeuner et une séance au dîner durant lesquelles plusieurs sujets pertinents aux nouveaux chercheurs seront discutés. Parmi les résumés soumis, il y aura des séances de présentations orales et par affiches.

Durant ce petit-déjeuner, des conférenciers invités donneront des conseils sur la rédaction de publications et discuteront des meilleures pratiques dans la publication de la recherche académique et clinique en cancer.

By invitation only.

7:00 a.m.

CANADIAN CONSORTIUM FOR SURVIVORSHIP RESEARCH

Chairs:
Richard Doll
BC Cancer Agency, Vancouver

Arminee Kazanjian
University of British Columbia, Vancouver

Purpose: To highlight the value of this fledgling consortium and to explore novel approaches for collaboration.

This session will be an introduction to activities currently underway, and open discussion on future directions. Jennifer M. Jones, Princess Margaret Hospital, UHN and University of Toronto, will speak about the monthly on-line survivorship research rounds.

Open to all interested in this area of research collaboration.

7:00 a.m.

PROSTATE CANCER CANADA'S CANADIAN BRCA1-BRCA2 PROSTATE CANCER NETWORK

Prostate Cancer Canada

Meeting of the Prostate Cancer Canada's investigators of prognosis and novel treatment for BRCA gene-associated prostate cancers.

Closed session.

7:30 a.m.

THE CANADIAN CANCER SOCIETY'S NEW RESEARCH PORTFOLIO

Canadian Cancer Society / Société canadienne du cancer

This is an opportunity to hear about and to discuss, directly with senior CCS/CCSRI staff, the CCSRI's newly redesigned research portfolio: what are the programs, why were changes made, what are we hoping to accomplish.

All are welcome to attend.

8:30 a.m.

CONCURRENT SYMPOSIA – B

8:30–10:00 a.m.

B1 – CLINICAL TRIALS SHOWCASE

Canadian Cancer Society / Société canadienne du cancer

Chairs:
Ralph Meyer
Queen's University & NCIC Clinical Trials Group, Kingston

Daniel Rayson
QEII Health Sciences Centre, Dalhousie University & Atlantic Clinical Cancer Research Unit, Halifax

The goal of this session is to provide exciting results of recent trials that have improved outcomes, changed paradigms and will influence current research directions and clinical practices. The trials selected for presentation also represent the spectrum of clinical trials research and include methodologies that range from facilitating the understandings of developmental concepts to testing strategies that are directly related to current clinical practice. Three internationally known clinical researchers will present and address a number of new paradigms their research has fostered. These will include novel therapeutics at their earliest testing in humans, a novel prostate cancer treatment concept that has moved from the pre-clinical setting and is currently in phase II clinical trial development, and a large phase III randomized clinical trial with international implications for the effective use of adjuvant radiation therapy for patients with breast cancer. In addition, two of the finest clinical trial-related scientific abstracts submitted to this meeting will be presented, addressing trial results from Calgary on a new agent for patients with prostate cancer and data from Ottawa evaluating the integration of complementary therapies into patient management.

8:30 a.m. **IS IT TIME FOR A PARADIGM SHIFT IN PHASE 1 CLINICAL TRIAL DESIGN?**
Patricia LoRusso
Karmanos Cancer Institute, Detroit

8:50 a.m. **DEFINING A ROLE FOR COMPLEMENTARY MEDICINE PRACTITIONERS IN INTEGRATIVE ONCOLOGY CARE**
Laura C. Weeks
Ottawa Integrative Cancer Centre, Ottawa

9:05 a.m. **THE EFFECTIVENESS & TOLERABILITY OF ABIRATERONE ACETATE IN PATIENTS WITH CASTRATION RESISTANT PROSTATE CANCER TREATED IN ALBERTA**
Ravinder Clayton
Tom Baker Cancer Centre, Calgary

9:20 a.m. **TARGETING CLUSTERIN, A MULTIFUNCTIONAL CHAPERONE, WITH OGX-011 AS A THERAPEUTIC STRATEGY FOR ADVANCED PROSTATE CANCER**
Kim Chi
BC Cancer Agency, Vancouver

9:40 a.m. **A RANDOMIZED TRIAL OF REGIONAL NODAL IRRADIATION IN EARLY BREAST CANCER**
Tim Whelan
Juravinski Cancer Centre & McMaster University, Hamilton

8:30–10:00 a.m.

B2 – CANCER COHORTS: THEIR PROMISE AND DELIVERY

Ontario
Cancer Care Ontario
Action Cancer Ontario

Chair:
Alison Spaull
Canadian Partnership Against Cancer

The prospective cohort design is a key approach to improving understanding of the complex interactions that affect health and the causes of cancer and many other chronic diseases. The EPIC study pioneered the design for cancer but has already provided major insights into cardiovascular disease. The study's data and samples continue to be much used although methodologies have evolved greatly over time. Lessons learned will be outlined. The Canadian Partnership for Tomorrow project was a key recommendation from the CCRA members to the then newly established Canadian Partnership Against Cancer. They recommended that a cohort be established with a focus on cancer as legacy infrastructure able to underpin a broad range of future studies. Recruitment began three years ago. The project's purpose, ambitions and challenges will be described. The potential for such cohorts to provide powerful infrastructure, able to support large scale studies of genetics and genomics is recognized as a means to improve our knowledge of disease and its treatment. This aspect will be amplified to describe a comprehensive approach to translational epidemiology and to outline strengths and weaknesses. The speakers hope to generate much discussion of the issues raised.

8:30 a.m. **PROSPECTIVE COHORT STUDIES ON NUTRITION, METABOLISM AND CANCER – RESULTS SO FAR, AND CHALLENGES FOR THE FUTURE**
Rudolf Kaaks
German Cancer Research Centre (DKFZ), Heidelberg, Germany

8:50 a.m. **THE CANADIAN PARTNERSHIP FOR TOMORROW PROJECT**
Paula Robson
Alberta Health Services – Cancer Care, Edmonton

9:15 a.m. **EPIDEMIOLOGIC AND SURVIVORS CANCER COHORTS: A COMPREHENSIVE POPULATION RESEARCH APPROACH FOR TRANSLATIONAL EPIDEMIOLOGY**
Daniela Seminara
National Cancer Institute, Bethesda

9:35 a.m. Discussion

8:30–10:00 a.m.

B3 – CANCER INITIATING CELLS

Canadian Cancer Society / Société canadienne du cancer

Chair:
Connie Eaves
Terry Fox Laboratory, BC Cancer Agency & University of British Columbia, Vancouver

Cancers represent continuously diversifying perturbations of normal tissues in which the control of genomic stability, survival, proliferation, differentiation and invasive properties are variably deregulated. In humans, a clinically distinguishable malignant population is not usually detectable until multiple rare genetic and epigenetic alterations have been clonally acquired. The most likely cells to accumulate such changes are the self-sustaining stem cells of the tissue which produce the shorter-lived, differentiated, functional elements. It would thus be expected that early stage premalignant and malignant clones would contain many cells that are incapable of further division even though they lack morphological features of their normal differentiated tissue counterparts. This is consistent with the observation that, in many human cancers, only a minor subset of the malignant cells possess self- (and hence) tumour-propagating ability in experimental (transplant assays in immunodeficient mice). Moreover, these operationally defined "cancer stem cells" or "cancer-initiating cells" typically share some features of the normal stem cells of the tissue in which they arise, although their immediate origin may be an expanded pool of intermediate progenitor types. This concept provides a framework for understanding the multi-step nature of oncogenesis that can operate throughout the early stages of the normal tissue developmental hierarchy. It also suggests a model for understanding therapeutic failures and offers important, albeit challenging, opportunities for developing more effective therapeutics.

8:30 a.m. **EPIGENETIC DETERMINANTS OF CANCER INITIATING CELLS**
Guy Sauvageau
Institut de recherche en immunologie et en cancérologie, Montréal

8:55 a.m. **DEVELOPING THERAPEUTICS FOR BRAIN TUMOUR STEM CELLS**
Peter Dirks
The Hospital for Sick Children & University of Toronto, Toronto

9:20 a.m. **CANCER-INITIATING CELLS IN HEAD AND NECK SQUAMOUS CELL CARCINOMA**
Laurie Ailles
Ontario Cancer Institute, University Health Network & University of Toronto, Toronto

9:45 a.m. **LYSOSOMAL DISRUPTION SELECTIVELY TARGETS LEUKEMIA CELLS AND LEUKEMIA STEM CELLS THROUGH A MECHANISM RELATED TO INCREASED REACTIVE OXYGEN SPECIES PRODUCTION**
Mahadeo A. Sukhai
Princess Margaret Hospital & Ontario Cancer Institute, Toronto

8:30–10:00 a.m.

B4 – TACKLING COMPLEX PROBLEMS WITH SIMPLE ORGANISMS

CIHR IRSC
Canadian Institutes of Health Research | Instituts de recherche en santé du Canada

Chair:
Gerald Johnston
Dalhousie University, Halifax

The complex and varied nature of cancer demands new and innovative research approaches to reveal important details about both underlying molecular changes leading to cancer and identification of effective strategies to detect, treat and perhaps even prevent this disease. One of the most remarkable findings within biology over the past few decades is the appreciation that there is remarkable conservation of cellular function among all types of cells, ranging from apparently simple unicellular organisms like yeast to simple multicellular organisms such as worms and flies to complex organisms including humans. More to the point, these types of simple organisms are often amenable to sophisticated experimental manipulations not possible (or at the very least, difficult) with more complex systems. As a result, use of model systems often provides insights for our understanding of more complex cell types such as human cells. Many research programs have adopted the strategy of utilizing experimentally tractable model systems to rapidly tease out molecular information that can be applied to human biology. This symposium will explore the application of various model systems to our understanding of processes that affect cancer development and progression.

8:30 a.m. **USING BUDDING YEAST TO UNDERSTAND DNA END FATE**
Daniel Durocher
Samuel Lunenfeld Research Institute, Toronto

8:50 a.m. **EMPLOYING A SYNTHETIC LETHAL PARADIGM TO IDENTIFY NOVEL CANDIDATE DRUG TARGETS IN COLORECTAL CANCER**
Babu Sajesh
Manitoba Institute of Cell Biology & University of Manitoba, Winnipeg

9:00 a.m. **THE ZEBRAFISH AS AN INNOVATIVE VERTEBRATE TOOL FOR STUDYING CANCER DEVELOPMENT AND PROGRESSION**
Jason Berman
Dalhousie University & IWK Health Centre, Halifax

9:20 a.m. **NAKED1 ANTAGONIZES WNT SIGNALLING BY PREVENTING NUCLEAR ACCUMULATION OF B-CATENIN**
Terry Van Raay
University of Guelph

9:30 a.m. **USING *C. ELEGANS* TO INTERROGATE GENES INVOLVED IN CELL GROWTH, PROLIFERATION, AND METABOLISM**
Richard Roy
McGill University, Montréal

9:50 a.m. **PDZ-RhoGEF GOVERNS CROSSTALK BETWEEN RHO AND PI3K SIGNALLING**
Ying Ju Jang
Ontario Cancer Institute, Toronto

8:30–10:00 a.m.

B5 – EFFECTIVE CANCER SYSTEMS

Chair:
Eva Grunfeld
Ontario Institute for Cancer Research & University of Toronto, Toronto

For discoveries at the bench to improve care and outcomes, they must be effectively implemented within the health care system. This session will focus on the effectiveness of the cancer care system. The presentations will provide examples spanning the cancer care continuum of different methodological approaches to studying the effectiveness of the cancer system.

8:32 a.m. **USE OF POPULATION-BASED DATA TO EVALUATE THE QUALITY OF CANCER CARE**
Geoffrey Porter
Dalhousie University, Halifax

8:47 a.m. **DEVELOPING AN ABORIGINAL CANCER CARE STRATEGY IN NORTHERN BC THROUGH QUALITATIVE RESEARCH AND COMMUNITY ENGAGEMENT**
Pamela K. Tobin
BC Cancer Agency, Prince George

9:02 a.m. **PRIORITY SETTING IN CANCER CONTROL: DECISION ANALYTIC APPROACHES TO MODELLING COMPLEX CHOICES**
Stuart Peacock
Canadian Centre for Applied Research in Cancer Control; University of British Columbia & BC Cancer Agency, Vancouver

9:17 a.m. **FIRST-YEAR COSTS FOR THE 21 MOST COMMON CANCER DIAGNOSES IN ONTARIO**
Claire de Oliveira
Toronto General Hospital, Toronto

9:32 a.m. **THE QUALITY IMPROVEMENT IN COLORECTAL CANCER SURGERY IN LOCAL HEALTH INTEGRATION NETWORK (LHIN) 4 (QICC-L4) PROJECT**
Marko Simunovic
McMaster University, Hamilton

9:47 a.m. Discussion

10:00 a.m.

BREAK

10:30 a.m.-12:00 p.m.

PLENARY SESSION

Canadian Breast Cancer Foundation | Fondation canadienne du cancer du sein

Ontario
Cancer Care Ontario
Action Cancer Ontario

SCREENING AND EARLY DETECTION

Chair:
Heather Bryant
Canadian Partnership Against Cancer

Research in screening covers several fields of endeavour, and we commonly think of two key areas. Discovery research attempts to identify promising new screening modalities; for promising modalities, clinical research, is required to examine its impact in study populations. However, there is much more that needs to be understood before population-based screening is developed and delivered in a way that maximizes benefits and minimizes harms. Recent international publications concerning colorectal cancer screening and the potential role for spiral CT in screening for lung cancer demonstrate some positive recent findings, but also a number of grey areas that will need to be elucidated before consideration of widespread change in screening practice. The role of "anticipatory science" in advancing informed discussion on new screening findings will be elucidated. A later step in research translation is the assessment of the intervention's acceptability (by both the public and providers). In Canada, we have demonstrated wide gaps between public attitudes toward colorectal cancer screening and provider beliefs about those attitudes. Finally, research needs to contribute to the development of system indicators that can ensure effective, efficient and safe screening delivery. We will discuss research that has addressed our ability to "connect the dots" in provision of high-impact screening.

10:30 a.m. **MAXIMIZING IMPACT: CONNECTING THE DOTS BETWEEN EFFICACY RESEARCH AND POPULATION BENEFITS**
Heather Bryant
Canadian Partnership Against Cancer

Translational research is a rapidly growing area of research that is concerned with accelerating the transfer of findings in basic research into clinical research, and ultimately accelerating its adoption into clinical practice. The same type of research and knowledge transfer is required in the translation of efficacy findings into population practice in screening. In fact, it is arguable that this is even more critical in population-based screening, as the target population of clinicians, decision-makers and participants is so much wider than in specific clinical contexts, and thus, the potential for ineffective translation is much higher. A Canadian approach to screening translational research could be considered by addressing a few key areas. The definition of efficacy in screening contexts requires careful definition, and is key to the first step of the translational research cascade. Recent international publications concerning colorectal cancer screening and the potential role for spiral CT in screening for lung cancer demonstrate some positive recent findings, but also a number of grey areas that will need to be elucidated before consideration of widespread change in screening practice.

The role of "anticipatory science" in advancing informed discussion on new screening findings, as developed by CPAC in the past few years, is one approach to bridge this translation gap. A later step in research translation is the assessment of the intervention's acceptability (by both the public and providers). In Canada, we have demonstrated wide gaps between public attitudes toward colorectal cancer screening and provider beliefs about those attitudes, and addressing these is key to widespread adoption. Further, as guidelines change, we need to understand public perceptions of the reason for these changes; work in other jurisdictions have indicated that this is generally not well understood, and that public debate frequently obscures, rather than clarifies, the issues under discussion. Finally, as screening interventions are generally funded and evaluated as population-based initiatives, research needs to contribute to the development of system indicators that can demonstrate effective use of resources, a minimization of harm, and likelihood of reaching the eventual population benefits that the screening interventions are expected to provide. There is research that has set us upon that path, and the ability to "connect the dots", and our current research gaps in doing so, will be presented.

11:00 a.m. **NEW APPLICATIONS OF IMAGING IN THE EARLIER DETECTION AND MANAGEMENT OF CANCER**
Martin Yaffe
Imaging Research, Sunnybrook Research Institute; Departments of Medical Biophysics and Medical Imaging, University of Toronto; Smarter Imaging Program, Ontario Institute for Cancer Research, Toronto

Some cancers can be detected, often before symptoms are noticeable, through routine screening with a medical imaging modality. For example, screening mammography in combination with prompt use of modern therapies can contribute to a 25% reduction in mortality due to breast cancer in women over 40 years of age. Currently, research is underway to improve both sensitivity and specificity of cancer detection, e.g., by improving the conspicuity of cancers through 3-dimensional imaging methods. While most current imaging techniques are based on macroscopic physical changes associated with the development of cancer such as masses or microcalcifications, research is focussing on developing imaging that is sensitive to functional changes such as tumour angiogenesis or target to specific molecular changes. These methods could allow earlier detection of cancers or help characterize them, providing prognostic information to guide the selection of appropriate therapy, thereby avoiding over- or under-treatment. Imaging may also be useful to predict risk of future cancer so that individuals can be stratified into more risk-appropriate screening regimens. An overview of some of the research to create improved cancer imaging methods will be presented.

11:30 a.m.

FACTORS ASSOCIATED WITH EARLY CANCER DETECTION

Patti Groome
Queen's University, Kingston

An early diagnosis is an important determinant of cancer survival. Cancer screening increases early detection rates, but many cancers are symptomatic at diagnosis. Some can be detected during routine clinical examination, while others depend on the awareness and diligence of the patient and the quality of health care delivery for early recognition. We need to better understand who is at risk of a late diagnosis and how timely diagnoses occur.

Current knowledge will be reviewed within a conceptual framework based on the chronic disease model with a focus on the identification of predictors of an early diagnosis and of timely diagnostic wait times. These factors exist in a hierarchical structure, working together and individually to influence the quality of the diagnostic episode. That structure can be defined across four domains: a) health care system, b) primary care provider, c) individual patient, and d) the patient's usual healthcare pattern.

The goal of this talk is to present the problem, provide an overview of what is known, and promote the need for further research in this area. Better understanding of the diagnostic process as it currently exists is useful for identification of populations at risk, the delivery of cancer screening programs, development of early detection guidelines, and the configuration of diagnostic assessment units, which all have as their goal increasing early detection rates.

12:00 p.m.

LUNCH

12:45–2:15 p.m.

PLENARY SESSION

Canadian Cancer Society / Société canadienne du cancer

PREVENTION: FROM SNPS TO POLICY

Chairs:
Roy Cameron
University of Waterloo & Propel Centre for Population Health Impact, Waterloo

David Malkin
The Hospital for Sick Children, Toronto

Major advances are being made in cancer prevention at many levels, across many fields. This session features scientists who are world leaders in some of the most exciting areas of prevention research. The session deliberately creates an opportunity for conference attendees to get a sense of the remarkable diversity in emerging approaches to cancer prevention and the research that is driving progress. The session will begin with an examination of the potential for constitutional genetic biomarkers to determine cancer risk and to be used for primary tumour-specific prevention strategies. This will be followed by current appraisals of the evidence for distinct approaches to prevention programs contrasting two of the greatest killers – breast and lung cancer. The breadth of work covered in this session will highlight the real and potential impact that the breadth of prevention research from polymorphisms to health policy will have in the prevention of cancers.

12:45 p.m. **BRM POLYMORPHISMS IN LUNG CANCER RISK STRATIFICATION. A NEW CLINICAL PARADIGM?**

Geoffrey Liu
Ontario Cancer Institute, Princess Margaret Hospital & University of Toronto, Toronto

SWI/SNF (SWItch/sucrose non-fermentable) complexes are ATP-dependent chromatin remodeling enzymes involved in the regulation of multiple functions, including gene expression, differentiation, development, DNA repair, cell adhesion and cell cycle control. BRM, a key SWI/SNF complex subunit, is silenced in 15-20% of many solid tumours. As BRM-deficient mice develop 10-fold more tumours when exposed to carcinogens, BRM is a strong candidate for a tumour suppressor gene (TSG). TSGs and oncogenes are commonly altered during carcinogenesis. For oncogenes/growth pathway genes, targeting mutated/activated forms (e.g., EGFR-Her2/Neu pathways) is an effective anti-cancer approach. Pharmacologically targeting TSGs has not been as fruitful, as most TSGs are irreversibly silenced through somatic mutation or entirely deleted during carcinogenesis, thereby making it difficult to restore gene function.

Unlike other TSGs, loss of BRM has been shown to be a reversible epigenetic change, rather than an irreversible genetic alteration. Using a high throughput drug screen, a number of compounds were identified that could effectively restore BRM expression and function. As an example, two compounds were found to be such reactivating agents. Both compounds led to robust re-expression of BRM, induced downstream expression of BRM-dependent genes and inhibited BRM-dependent growth across a wide range of BRM-deficient cancer cell lines of different origins. Thus, pharmacologic reversal of epigenetic changes of the SWI/SNF chromatic remodeling complex subunit, BRM, is a potentially viable approach.

BRM is regulated by transcription, thus demonstrating that the promoter region is important for BRM expression. The BRM promoter region was sequenced, finding two novel promoter indel polymorphisms, BRM -741 and BRM -1321, that are in linkage disequilibrium ($D' \geq 0.83$). The variant insertion alleles of both polymorphisms produce sequence variants that are highly homologous to myocyte enhancer factor-2 (MEF2) transcription factor-binding sites; MEF2 is known to recruit histone deacetylases that silence BRM expression. Each polymorphic BRM insertion variant is found in ~20% of Caucasians, and each correlates strongly with the loss of protein expression of BRM, both in cancer cell lines ($P=0.009$) and in primary human lung tumour specimens ($P=0.015$). With such strong functional evidence, a case-control study of 1199 smokers was performed. An increased risk of lung cancer was found when both BRM homozygous promoter insertion variants ($p=0.004$).

Thus, BRM polymorphisms may be useful potentially to screen smokers and identify those at risk for dysregulated BRM; those identified at risk could be treated with targeted pharmacologic therapies to restore BRM function to reduce lung cancer risk. The presentation will describe the potential for this to be a novel molecularly defined primary prevention strategy.

1:15 p.m.

UPDATE ON BREAST CANCER PREVENTION

André Robidoux
Université de Montréal, Montréal

Many approaches have been proposed for breast cancer prevention: lifestyle modification, prophylactic mastectomy and chemo prevention. Chemo prevention trials among thousands of women in North America and Europe testing currently available Selective Estrogen Receptor Modulators (SERM) have been conducted over the last 20 years. Tamoxifen has reduced the risk of invasive breast cancer by 49% and non-invasive breast cancer by 50% in the Breast Cancer Prevention Trial (BCPT). However, Tamoxifen is associated with adverse effects such as endometrial cancer, deep vein thrombosis and stroke.

Raloxifen, another SERM has been shown to effectively reduce the risk of invasive breast cancer in post-menopausal women in the MORE and RUTH trials. These trials provided the rationale for The National Cancer Institute to initiate the NSABP study of Tamoxifen and Raloxifen (STAR) in 1999 to directly compare Tamoxifen with Raloxifen in a population of post-menopausal women with increased risk of breast cancer. Initial results with a median follow-up of 39 months showed that Tamoxifen and Raloxifen had similar effects on risk of invasive breast cancer: (RR 1.02, C.I. 0.82 to 1.28). Longer follow-up at 81 months, however, suggests that Raloxifen gives only 76% of the effectiveness of Tamoxifen with risk of invasive cancer. Raloxifen was associated with fewer endometrial cancer or thromboembolic events. From the basis of these results, Tamoxifen was approved for pre and post-menopausal women by the Food and Drug Administration. Later on Raloxifen was approved for the same indication in post-menopausal women. More recently, Goss et al published the results of a randomized placebo-controlled double-blind trial of an aromatase inhibitor exemestane conducted by the NCIC Clinical Trial Group. A randomized trial showed a significant reduction in the number of observed breast cancer occurrences in the exemestane group. No significant differences in skeletal fractures, cardiovascular events or other cancers were observed. Despite clear demonstration that SERM reduce breast cancer malignancies in women with increased risk by the GAIL nomogram and despite benefits risk assessment, women and doctors did not adopt this approach. They were concerned with adverse events but also limitations in identification of women at high risk and absence of valued biomarkers. Other concerns were raised such as uncertain reimbursement for new agents and limitation on current patent laws. It is interesting that chemo prevention of cardiovascular disease is well implemented in the general population and the medical community.

A genome wide association (GWAS) involving Tamoxifen or Raloxifen for breast cancer was conducted recently in patients who developed breast cancer in the BCPT P1 and STAR P2 consisting of 60% of such samples. Each was matched with two controls who did not. 10 SNPs associated with a protective effect (OR: 0.76) in a gene on chromosome 16 were identified. This might lead to a potential biomarker to select patients for the best protective effect of SERM in breast cancer prevention.

1:45 p.m.

TOBACCO CONTROL POLICIES IN CANADA OVER THE PAST DECADE: FINDINGS AND IMPLICATIONS FROM THE ITC PROJECT

Geoffrey Fong
University of Waterloo & Propel Centre for Population Health Impact, Waterloo; Ontario Institute for Cancer Research, Toronto

The International Tobacco Control Policy Evaluation Project (the ITC Project) is a prospective cohort study being conducted in 20 countries to measure the psychosocial and behavioural impact of key policies of the World Health Organization Framework Convention on Tobacco Control (FCTC), the world's first health treaty. In Canada, eight survey waves have been conducted between 2002 and 2010 among approximately 2,000 smokers to evaluate the effectiveness of policies including warning labels, advertising and promotion bans, smoke-free policies, and taxation policies. This talk will present highlights from the ITC Canada Survey on how the landscape of policies has changed in Canada in the past eight years.

In the domain of health warnings, the effectiveness of pictorial warning labels implemented in Canada in 2000 has declined across all seven indicators of warning label effectiveness. For example, in 2002, 60% of smokers reported that they noticed the warnings 'often' or 'very often' in the past month. This decreased to 34% of smokers in 2010. The new revised warnings, scheduled to appear next year, are much needed to reverse the downward trend due to wear-out.

With respect to smoke-free laws, Canadian communities and eventually provinces implemented policies to protect the public from the harms of tobacco smoke pollution. In 2005/06, 49% of smokers who visited a bar noticed others smoking indoors at last visit. This decreased to 2% of smokers in 2010. In 2005/06, 26% of Canadian smokers who visited a restaurant noticed others smoking indoors at last visit. This decreased to 1% in 2010. Complete smoking bans in workplaces were reported by 59% of smokers who work outside the home in 2002 and increased to 95% of smokers in 2010.

But further progress needs to be made to protect children from exposure to tobacco smoke pollution in the home and in cars. Complete bans on smoking in the home were reported by 32% of smokers in 2003, and increased to 47% of smokers in 2010. However, in 2010 only 68% of smokers with children under the age of 18 in the home had a complete ban on smoking in the home. Complete bans on smoking in cars during the same time period barely increased from 64% in 2002 to 68% in 2008/09.

Over time, the price of cigarettes has become a less important factor in promoting quitting. In 2002, 53% of smokers reported that price is 'very much' a reason to quit. In 2010, this percentage decreased to 31%. In 2002, 2% of smokers across Canada reported that they purchased cigarettes from a First Nations reserve, increasing to 10% of smokers in 2008/09. In 2010, smokers in Ontario were most likely (22%) to have purchased cigarettes from a First Nations reserve.

Looking ahead, the ITC Survey shows that even after all of the tobacco control policy advances over the last decade, Canadian smokers want more. More than half (54%) of smokers themselves agree or strongly agree that the government should do more to tackle the harms of tobacco. This is comforting in that there will surely be daunting challenges in continuing to reduce tobacco use – still by a large margin the number one preventable cause of death and disease in Canada.

2:15 p.m.

BREAK

2:30 p.m.

CONCURRENT SYMPOSIA – C

2:30–4:00 p.m.

C1 – EMERGING THERAPEUTICS: DETECT, DECIDE AND DESTROY

Chairs:
Brian Wilson
Princess Margaret Hospital, Toronto

Calum MacAulay
BC Cancer Agency, Vancouver

The focus of this session will be novel approaches to cancer treatment based on emerging technologies and exploiting biophysical mechanisms, in particular advances in multimodality tumour imaging to plan and guide treatments and to assess therapeutic responses. It will include robotic and image-guided surgery, the use of highly targeted energy sources, and the applications of nanoparticles as both tumour localizers and energy "amplifiers".

2:30 p.m.

SHINING THE BLUE LIGHT FROM BENCH TO BEDSIDE FOR ORAL CANCER CONTROL

Catherine Poh
BC Cancer Agency, Vancouver

2:53 p.m. PORPHYSOME NANOTECHNOLOGY: A NEW PARADIGM TO DETECT, DECIDE AND DESTROY CANCER
Gang Zheng
Ontario Cancer Institute, University Health Network & University of Toronto, Toronto

3:16 p.m. OPTICAL IMAGING OF MOLECULES IN HUMANS
Brian Pogue
Dartmouth College, Hanover

3:40 p.m. *IN VIVO* OPTICAL IMAGING OF TUMOUR AND MICROVASCULAR RESPONSE TO IONIZING RADIATION
Azusa Maeda
University of Toronto, Toronto

3:50 p.m. A PATENTED TRACER, TC99M CYSTEINE RHENIUM COLLOID HAS EXCELLENT TRAPPING IN SENTINEL LYMPH NODES OF BREAST CANCER PATIENTS
Pamela Zabel
London Health Sciences Centre, London

2:30–4:00 p.m.

C2 – PERSONALIZED MEDICINE: FROM DISCOVERY AND VALIDATION TO IMPLEMENTATION

Fonds de recherche Santé Québec

GenomeCanada

Chairs:
Gerald Batist
Segal Cancer Centre & McGill University, Montréal

Anne-Marie Mes-Masson
Université de Montréal, Montréal

This symposium will focus on the challenges of expanding on the first few examples of personalized medicine, both at the level of discovery and translation into multiple aspects of clinical care.

The session will provide recent examples of biomarker identification and validation, highlighting both the complexity and logistical challenges of interfacing clinical trials with technology platforms, and generating molecular signatures to guide therapy. Since all new drug development is performed in the metastatic disease setting, studying these in relationship to particular molecular signatures requires metastatic tumour biopsies. This represents an ethical, logistical, pathological and scientific challenge. Additional topics covered will include the distinction between prognostic markers and therapeutic predictive markers, the critical need for biomarkers and molecular signature for 'targeted' biological agents, and the validation challenges to getting biomarkers into the clinic.

The 'personalized' aspect of molecular medicine is also having an impact on how new biological therapeutics are being designed. In particular, new approaches such as oncolytic viruses and cancer vaccines are exciting new areas, but the tumour and host microenvironment once again come into play and effect efficacy.

2:30 p.m. PREDICTIVE MOLECULAR BIOMARKERS: THE ROAD TO PERSONALIZING THERAPY
Mark Basik
McGill University, Montréal

2:50 p.m. PROGNOSTIC AND PREDICTIVE BIOMARKERS – PROMISES AND PITFALLS
Anthony Joshua
Princess Margaret Hospital, Toronto

3:10 p.m. PERFORMING CONFIRMATORY TUMOUR BIOPSIES IN METASTATIC BREAST CANCER PATIENTS. ARE WE CROSSING THE RUBICON OR UP THE SWANEE?
Mark Clemons
University of Ottawa, Ottawa

3:30 p.m. A HISTONE DEACETYLASE INHIBITOR DRAMATICALLY IMPROVES THE THERAPEUTIC INDEX OF AN ONCOLYTIC VACCINE BY AUGMENTING ANTI-TUMOUR ACTIVITY WHILE INHIBITING AUTOIMMUNE SEQUELLAE
Byram Bridle
University of Guelph, Guelph

3:45 p.m. COMBINING TUMOUR SPECIFICITY AND MODULATION OF DC LIFESPAN TO IMPROVE CANCER VACCINES
James C. M. Wang
University Health Network & Ontario Cancer Institute, Toronto

2:30–4:00 p.m.

C3 – CANCER SANS FRONTIERS: CANADA'S ROLE IN THE GLOBAL WAR ON CANCER

POGO
PEDIATRIC ONCOLOGY GROUP OF ONTARIO

Ronald Barr
McMaster University, Hamilton

Mary Gospodarowicz
Princess Margaret Hospital, Toronto

Cancer is a leading cause of death worldwide. Approximately 8 million people die of cancer each year. More than 70% of all cancer deaths occur in low and middle income countries, where resources available for cancer control are limited or nonexistent. However, with current knowledge, all parts of the world can engage in some cancer control activities. Canada has extensive international assistance programs however these programs do not address cancer.

Although Canadians hold leadership roles in organizations like the Union for International Cancer Control (UICC), the International Society of Paediatric Oncology (SIOP), and the International Network for Cancer Treatment and Research (INCTR), and many Canadian clinical oncologists and cancer researchers are engaged in various formal and informal international collaborations, there is a need to better understand the global cancer burden and the opportunities to engage our cancer organizations internationally. We must develop an inventory of Canadian practices and skills that can be leveraged globally. We should discuss how to communicate and best coordinate our efforts to enable the whole becoming greater than the sum of the parts. We look forward to reviewing examples of Canadian engagement and opening a discussion on future directions for Canadian engagement in global cancer control.

2:30 p.m. **GLOBAL CANCER PROBLEM TODAY**
Mary Gospodarowicz
Princess Margaret Hospital, Toronto

2:40 p.m. **NUTRITIONAL STATUS AND CANCER OUTCOMES IN CHILDREN IN CENTRAL AMERICA**
Ronald Barr
McMaster University, Hamilton

2:55 p.m. **REDUCING INFECTIONS IN LOW INCOME COUNTRIES – THE CANADIAN CONTRIBUTION**
Lillian Sung
The Hospital for Sick Children, Toronto

3:10 p.m. **A MATCHED CASE-CONTROL STUDY OF RISK FACTORS FOR BREAST CANCER IN VIETNAM**
Ophira M. Ginsburg
Women's College Research Institute, Toronto

3:13 p.m. **MAKING RADIATION THERAPY MORE ACCESSIBLE IN THE WORLD: ADVANCES IN CO-60 RADIATION THERAPY**
Matthew B. Marsh
Queen's University, Kingston

3:16 p.m. **ESTABLISHMENT OF A TRIPLE NEGATIVE BREAST CANCER DATABASE IN VIETNAM**
Johnny Nguyen
University of Toronto, Toronto

3:19 p.m. **MAD DOGS AND CANADIANS**
Simon Sutcliffe
University of British Columbia, Vancouver

3:29 p.m. Discussion

2:30–4:00 p.m.

C4 – PALLIATIVE/END-OF-LIFE CARE

Canadian Cancer Research Alliance • Alliance canadienne pour la recherche sur le cancer

Chair:
Harvey Max Chochinov
University of Manitoba, Winnipeg

According to the World Health Organization, palliative care is "an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual." Canadian researchers are playing an important role in their efforts to improve palliative care and over the past decade, have made substantive inroads. This symposium will address various domains of influence on suffering and quality of life and how these can be empirically informed. Attendees will be provided an overview of some noteworthy Canadian studies, which have influenced how we understand and approach patients nearing end-of-life and their families.

2:30 p.m. **DIFFICULT CANCER PAIN PROBLEMS: OUTCOME OF A MULTICENTRE, 5-YEAR TEAM GRANT**
Neil Hagen
University of Calgary, Calgary

2:55 p.m. **DO PSYCHOSOCIAL INTERVENTIONS INFLUENCE OUTCOMES IN PATIENTS WITH ADVANCED AND TERMINAL DISEASE?**
Gary Rodin
Princess Margaret Hospital, University Health Network, Ontario Cancer Institute & University of Toronto, Toronto

3:20 p.m. **TEN YEARS OF RESEARCH ON FAMILY CAREGIVING IN PALLIATIVE AND END OF LIFE CARE: WHAT HAVE WE LEARNED?**
Kelli Stajduhar
University of Victoria, Victoria

3:45 p.m. **COSTS FOR END-OF-LIFE CARE FOR ELDERLY PATIENTS WITH ADVANCED LUNG CANCER IN ONTARIO**
Murray Krahn
University Health Network & University of Toronto, Toronto

2:30–4:00 p.m.

C5 – TUMOUR MICROENVIRONMENT

The Terry Fox Research Institute
L'Institut de recherche Terry Fox

Chair:
Stephen Robbins
Southern Alberta Cancer Research Institute, Faculty of Medicine, University of Calgary, Calgary

Cancer initiation, progression and metastases involves not just the tumour cells themselves, but also other "host" cells and molecules within the tumour microenvironment. The tumour microenvironment is a major factor influencing treatment resistance to conventional cancer therapies. In this symposium various aspects of tumour-stromal interactions will be explored including a focus on the role of immune cells in a complex tumour microenvironment with the ultimate goal of exploiting the microenvironment to develop novel cancer treatment strategies.

2:30 p.m. **SHARING 'PRIVATE' MOLECULES: MICROVESICLE-MEDIATED INTERCELLULAR COMMUNICATION DURING CANCER PROGRESSION AND ANGIOGENESIS**
Janusz Rak
Montreal Children's Hospital, McGill University, Montréal

2:50 p.m. **MODULATING THE MAMMARY MICROENVIRONMENT**
Rama Khokha
Ontario Cancer Institute & Princess Margaret Hospital, Toronto

3:10 p.m. **DISCOVERY OF CIITA GENE FUSIONS IN B CELL LYMPHOMAS BY NEXT GENERATION SEQUENCING**
Randy Gascoyne
BC Cancer Research Centre, BC Cancer Agency & University of British Columbia, Vancouver

3:30 p.m. **MOLECULAR MECHANISMS GOVERNING BREAST CANCER IMMUNOSUPPRESSION**
Josie Ursini-Siegel
Lady Davis Institute for Medical Research, Montréal

3:45 p.m. **TLR2-MEDIATED TUMOUR GROWTH INHIBITION REQUIRES MAST CELLS AND IS ASSOCIATED WITH T CELL RECRUITMENT**
Sharon A. Oldford
Dalhousie University, Halifax

4:00 p.m.

POSTER SESSION 2 (POSTERS I–R)

5:30 p.m.

POSTER DISCUSSION SESSIONS 2*

DISTINCT POPULATIONS

Conference Room B & C

Chair:
Donna Turner
CancerCare Manitoba, Winnipeg

I02
Research Collaboration: Rural and Northern Cancer Care
Candice Marlene Manahan
BC Cancer Agency, Prince George

E22
Portuguese Speaking Communities in Toronto: Particularities and Potentialities for Creating Supportive Networks for Breast Cancer
Margareth Zanchetta
Ryerson University, Toronto

I29
Cancer in Manitoba's First Nations: Evidence of an Impending Storm
Donna Turner
CancerCare Manitoba, Winnipeg

EPIGENETICS

Civic Ballroom North

Chair:
Jim Davie
Manitoba Institute of Cell Biology, Winnipeg

Q09
Investigating the Mechanisms by which EZH2-Y641 Mutation Contributes to Lymphomagenesis
Emilia L. Lim
BC Cancer Agency, Vancouver

Q10
The Role of Myc-induced Non-coding RNAs in Human Cancer Biology
Matthew S. MacDougall
Ontario Cancer Institute & University of Toronto, Toronto

Q07
SNPs in the MLH1 Gene Region are Associated with Differential Methylation of a CpG Island "Shore" in a Large Population of Healthy Controls and Colorectal Cancer Patients
Andrea J. Savio
Samuel Lunenfeld Research Institute, Toronto

Q02
Combining Valproic Acid (VPA) and Fludarabine in treating Chronic Lymphocytic Leukaemia (CLL)
Ju-Yoon Yoon
University of Manitoba, Winnipeg

ONCOLYTIC VIRUSES

Essex Ballroom

Chair:
John Bell
Ottawa Hospital Research Institute, Ottawa

R08
Tumour Vasculature Effects of Oncolytic Vaccinia Virus Infection in a Window-Chamber Tumour Model
Fernando A. Angarita
Toronto General Research Institute & University of Toronto, Toronto

R20
Mechanism of Oncolytic Virus Targeting of Tumour-Associated Vasculature
Rozanne P. Arulanandam
Ottawa Hospital Research Institute, Ottawa

R06
Reovirus-Mediated Oncolysis and Immune Modulation during Ovarian Peritoneal Carcinomatosis
Shashi A. Gujar
Dalhousie University, Halifax

R04
Anti-Tumour Activity of an Oncolytic Vaccinia Virus Deleted in the Gene Encoding the Small Subunit of Ribonucleotide Reductase with and without Additional Deletion of Thymidine Kinase
Mary M. Hitt
University of Alberta, Edmonton

R16
Combining Adoptive T Cell Transfer with Oncolyic Virotherapy: Improving Anti-Tumour Immunity
Heather E. VanSeggelen
McMaster University, Hamilton

PREVENTION RESEARCH

Civic Ballroom South

Chair:
Jon Kerner
Canadian Partnership Against Cancer

J08
Evidence-Based Strategies for Lung Cancer: Clinically Important Findings from a Series of Systematic Reviews
Heidi Fritz
The Canadian College of Naturopathic Medicine, Toronto

J15
Is Night Shift Work Associated with Breast Cancer Risk?
Anne L. Grundy
Queen's University, Kingston

S29
Does the Lifetime Number of Ovulatory Cycles Predict the Risk of Breast Cancer in BRCA1 and BRCA2 Mutation Carriers?
Joanne Kotsopoulos
Women's College Research Institute & University of Toronto, Toronto

*Alphanumerics denote poster codes as referenced in the Abstract Book.

6:30 p.m.

AWARDS DINNER AND GUEST PRESENTATION

6:30 p.m. **WELCOME AND THANK YOU TO SUPPORTERS**
Stuart Edmonds, Master of Ceremonies
CCRA Executive Director & Director, Research Portfolio, Canadian Partnership Against Cancer

DINNER

8:00 p.m. **CCRA AWARD FOR DISTINGUISHED SERVICE TO CANCER RESEARCH – M. ANDRÉ PICARD**
Introduction to the award by Elizabeth Eisenhauer and introduction to Jessica Hill.
Award citation and introduction by Jessica Hill, CEO, Canadian Partnership Against Cancer.

M. André Picard

André Picard is the public health reporter at The Globe and Mail and the author of three best-selling books. He has received much acclaim for his writing and for his dedication to improving healthcare.

In 2010 André was awarded the National Newspaper Awards as Canada's top newspaper columnist. Among his other accolades, André received the "Outstanding Leadership in Cancer Control Prize" from the Campaign to Control Cancer and he was named Canada's first "Public Health Hero" by the Canadian Public Health Association.

He lives in Montréal.

8:05 p.m. **IS PERSONALIZED MEDICINE COMPATIBLE WITH PUBLIC HEALTH INSURANCE?**
André Picard

A veteran journalist examines the medical, ethical and public policy challenges that are emerging for medicare as we move into an era of personalized medicine.

WEDNESDAY, NOVEMBER 30, 2011

EVENT LOCATIONS

7:00 a.m.	Focusing Alberta's Cancer Research Investment [INVITE ONLY]		Conference Room B & C
7:00 a.m.	CCO Scientists' Meeting [INVITE ONLY]		Civic Ballroom North
7:00 a.m.	CTRNet Breakfast Workshop [OPEN]		Civic Ballroom South
8:30 a.m.	**Plenary Session: Survivorship: The Next Frontier of Cancer Research**		Osgoode Ballroom
10:00 a.m.	BREAK		Sheraton Hall D
10:15 a.m.	CONCURRENT SYMPOSIA D	The Optics of Omics	Civic Ballroom South
		Canadian Cancer Prevention Research Strategy	Conference Room B & C
		Personalized Medicine: Education, Ethics and Economics	Civic Ballroom North
		Emerging Therapeutics: Drugs	Osgoode Ballroom
11:45 a.m.	BREAK		Sheraton Hall D
12:00 p.m.	**Plenary Session: New Frontiers in Cancer Research**		Osgoode Ballroom
1:30 p.m.	CONFERENCE CLOSING REMARKS		Osgoode Ballroom

DETAILED AGENDA – WEDNESDAY, NOVEMBER 30, 2011

7:00 a.m.

FOCUSING ALBERTA'S CANCER RESEARCH INVESTMENT

The Alberta Cancer Foundation and Alberta Innovates Health Solutions have signed an agreement to spearhead development of an integrated provincial cancer research plan. Consultation for the plan's development is currently underway, but the Canadian Cancer Research Conference offers a unique opportunity for broader input. We're interested in hearing a wide range of opinions on the areas Alberta should build on to maximize existing research strength, most directly impact cancer incidence and care, and contribute to the national and global cancer effort.

The innovative agreement between a social agency funded by donations and a government agency funded by tax dollars will result in an investment of up to $50 million annually for cancer research in Alberta.

This is a closed session.

7:00 a.m.

CCO SCIENTISTS' MEETING

To review a plan, and provide input to it, for the development of a Research Strategy for Cancer Care Ontario.

This is a closed session.

7:00 a.m.

CTRNET BREAKFAST WORKSHOP

CANADIAN TUMOUR REPOSITORY NETWORK
RÉSEAU CANADIEN DE BANQUE DE TUMEURS

The Canadian Tumour Repository Network (CTRNet) is a consortium led by provincial tumour biobank programs in BC, Alberta, Manitoba, Ontario and Quebec. CTRNet is funded by the Institute of Cancer Research, Canadian Institutes of Health Research and was created in 2004 to further translational cancer research by linking cancer researchers with tumour biobanks and by improving standardization and quality of biobanking. The workshop will outline CTRNet activities and achievements, with major emphasis on the national biobank registration and certification initiative currently underway.

This session is open to all.

7:00 a.m.	Welcome/Continental Buffet
7:15 a.m.	Introduction to CTRNet Dr. Brent Schacter
7:35 a.m.	Biobank Databases: CTRNet Solution Mr. Aaron Suggitt
7:45 a.m.	Certification/Education Initiatives Dr. Peter Watson
8:15 a.m.	Q&A Dr. Anne-Marie Mes-Masson
8:25 a.m.	Closing Comments Dr. Brent Schacter

8:30–10:00 a.m.

PLENARY SESSION

Canadian Cancer Research Alliance • Alliance canadienne pour la recherche sur le cancer

SURVIVORSHIP: THE NEXT FRONTIER OF CANCER RESEARCH

Chair:
Mark Greenberg
The Hospital for Sick Children, Toronto

The dramatic changes in survival rates in recent years have produced a rapidly escalating survivor population – estimated by SEER to have reached 11.7 million by 2007. But there is a cost to cure – many survivors will experience major physical and psychosocial late effects and will impose huge costs on the health care system. A substantial portion of survivors of adult cancer are over 65, and have comorbidity which is either caused by or exacerbated by the cancer treatment, while 2/3 of survivors of childhood cancer exhibit at least one major late effect by young adulthood. They are projected to age prematurely, and have substantially elevated risks for all major diseases of aging.

Survivorship constitutes a coming storm, and this session will explore the dimensions of that storm, and approaches to optimizing outcomes, from several perspectives.

8:30 a.m.

CANCER SURVIVORSHIP: SURVEYING THE LANDSCAPE OF HEALTH SERVICES RESEARCH

Eva Grunfeld
Ontario Institute for Cancer Research & University of Toronto, Toronto

There is substantial international interest in the health care needs of cancer survivors. This stems from the large and growing prevalence of cancer survivors due to growth and aging of the population and improved survival through earlier diagnosis and treatment. It is estimated that approximately 3% of the population in developed countries are cancer survivors. For the major adult cancers and many paediatric cancers, improvements in survival have led to a shift in perspective from cancer being a life threatening disease to a chronic disease. Accordingly, the concept of cancer survivorship now emphasizes the importance of long-term follow-up care, late-effects of cancer treatments, as well as general medical and preventive care. Cancer survivorship brings new challenges and opportunities for both cancer systems and broader health care systems. There is a need for research on cancer survivorship in order to develop a strong evidentiary base upon which to base survivorship care. This presentation will give a general overview of the epidemiology of cancer survivorship and describe three specific topics of cancer survivorship research: 1) long-term follow-up care; 2) cancer survivorship care plans; 3) and general medical and preventive health care needs of cancer survivors. A framework for cancer survivorship research will be presented. The results from original research will be presented.

9:00 a.m.

PHYSICAL ACTIVITY IN CANCER CONTROL: PAST, CURRENT AND FUTURE RESEARCH DIRECTIONS

Christine Friedenreich
Alberta Health Services – Cancer Care, Calgary

The role of physical activity in cancer etiology and survival is becoming increasingly clear. Over 275 separate studies have examined some aspect of physical activity and how it is related to cancer risk and 27 studies have now been published that have investigated the association between physical activity and survival after cancer. For cancer risk reduction, there is now convincing evidence that physical activity reduces the risk of both colon and breast cancers, probable evidence for endometrial cancer and possible evidence for a role in lung and prostate cancer etiology. The evidence for ovarian cancer and other cancer sites is still insufficient or limited at this time. The magnitude of the risk reduction for physically active individuals ranges from 10% for prostate cancer to 20-30% for breast cancer and 30-35% for colon and endometrial cancers. There is also evidence for a dose-response effect with increasing activity levels and decreasing risk for breast, colon and endometrial cancers. Several hypothesized biologic mechanisms have been proposed to explain how physical activity influences cancer risk. The main mechanisms that are common to most cancer sites are through a decrease in adiposity, sex hormone levels, insulin resistance, inflammation, and possibly enhanced immune function.

Randomized controlled exercise intervention trials (RCTs) are being conducted to determine how aerobic exercise influences these biomarkers associated with cancer risk. Three main trials have examined the effect of a year-long aerobic exercise intervention in postmenopausal, healthy but inactive women on several of these biologic mechanisms. These studies have found direct evidence of an effect on estradiol and sex hormone binding globulin, body fat levels, insulin and insulin resistance, adiponectin, leptin, glucose, C-reactive protein but limited evidence for an effect on insulin-like growth factors, interleukin-6, tumour-necrosis factor-alpha and mammographic density. These studies also provided some preliminary evidence for a dose-response effect on these biomarkers with increasing adherence to the exercise intervention. On-going studies are examining exactly what dose of activity is needed to have an optimal impact on these biomarkers. The evidence for an effect of physical activity on cancer survival is suggestive of a beneficial effect for breast and colon cancers: 12 of 17 studies conducted on breast cancer and all six studies on colon cancer have found a reduced risk of cancer specific mortality and all cause mortality associated with the highest levels of either pre- or post-diagnosis activity measured in these studies.

The evidence from these observational studies was considered sufficiently convincing to justify the conduct of a RCT in Stage II-III colon cancer that is currently on-going across Canada and Australia sponsored by the NCIC-CTG (CO.21 Trial). That trial will randomize 963 colon cancer survivors who have completed all adjuvant treatment to either a three year-long aerobic exercise intervention or a behavioural support intervention. Follow-up to 10 years post-randomization is planned. RCTs in cancer survivors have found that exercise may influence insulin and insulin-related pathways, inflammation, and possibly immunity however evidence is still preliminary. Future intervention research is needed to examine the combined effect of exercise and diet changes on cancer risk and survival that includes an examination of biomarkers and sub-group effects defined by tumour site and other personal and clinical characteristics.

9:30 a.m.

PHARMACOGENETIC DETERMINANTS OF LATE EFFECTS IN SURVIVORS OF CHILDHOOD CANCER

Rod Rassekh
British Columbia's Children's Hospital & University of British Columbia, Vancouver

Advances in the treatment of pediatric cancer have resulted in significant improvements in cure rates and presently over 80% of children with cancer will be cured of their disease. Unfortunately this improvement has come at a significant cost as a large proportion of children are left with significant late effects that cause significant life-long morbidity and even mortality. Therefore a recent focus of research in pediatric oncology has been to investigate outcomes in long term survivors, in order to try and eliminate these late effects. The recent advances in genomic technology has allowed researchers to begin to try and unravel the causes of treatment toxicity, and to answer the question of why one child has a devastating complication of therapy, while a similar child receiving the same treatment does not have any toxicity. It is thought that much of the variability to treatment response may be due to genetics and therefore many studies have investigated the role that single nucleotide polymorphisms (SNPs) may play in toxicity. This talk will highlight many of the recent advances in the understanding of drug toxicity in pediatric cancer, and specifically look at three specific late effect: cisplatin-induced hearing loss, cardiac toxicity due to anthracyclines, and radiation and chemotherapy induced second malignancies. Cisplatin which is used in the treatment of many childhood solid tumours is known to cause irreversible hearing loss in up to 62% of children. The lifelong impact this has on learning and development of a child is profound, especially in young children who have yet to develop language skills. The Canadian Pharmacogenomic Network for Drug Safety (CPNDS) has recently identified two genes (TPMT and COMT) that are associated with hearing loss. Studies are now underway to use protectant agents to try and maintain cure rates while reducing the incidence of hearing loss. Anthracyclines are highly effective in the treatment of both childhood hematologic and solid malignancies, yet are associated with significant cardiac damage in certain children. Recent advances in the understanding of cardiac toxicity will be presented, including models that use both clinical and genetic information to try and identify those at highest risk. Finally, recent advances in the genetics of secondary malignancies and the role that host variation may play in this will be presented.

10:00 a.m.

BREAK

10:15 a.m.

CONCURRENT SYMPOSIA – D

10:15–11:45 a.m.

D1 – THE OPTICS OF OMICS

Chair:
Marco Marra
Department of Medical Genetics, University of British Columbia & Genome Sciences Centre, BC Cancer Agency, Vancouver

Large-scale high throughput approaches have considerable potential to contribute to our understanding of the molecules involved in the initiation and progression of malignancies. The 'Omics symposium will profile the application of leading edge genomic, bioinformatic or proteomic technologies to cancers, with special emphasis on internationally leading studies that are re-shaping our views of cancer genomes, transcriptomes, and proteomes.

10:15 a.m. **GENETIC SUSCEPTIBILITY TO CANCER**
Mark Lathrop
McGill University and Génome Québec Innovation Centre, Montréal

10:38 a.m. **PROTEOME SIGNATURES AND PHOSPHORYLATION NETWORKS IN BLOOD AND LUNG CANCERS**
Michael Moran
The Hospital for Sick Children, University of Toronto, Ontario Cancer Institute, Princess Margaret Hospital & MaRS Centre, Toronto

11:01 a.m. **USING NEXT-GENERATION SEQUENCING TO IDENTIFY RECURRENT MUTATIONAL EVENTS IN HUMAN CANCERS**
Steven Jones
Genome Sciences Centre & BC Cancer Agency, Vancouver

11:24 a.m. **FUNCTIONAL GENOMIC CLASSIFICATION OF BREAST CANCER USING POOLED LENTIVIRUS SHRNA SCREENS**
Richard Marcotte
Ontario Cancer Institute & University Health Network, Toronto

11:35 p.m. **HIGH-THROUGHPUT FUNCTIONAL PROFILING OF DEDIFFERENTIATED LIPOSARCOMA CELL LINES**
Shantanu Banerji
Manitoba Institute of Cell Biology & CancerCare Manitoba, Winnipeg

10:15–11:45 a.m.

D2 – CANADIAN CANCER PREVENTION RESEARCH STRATEGY

Chairs:
Roy Cameron
University of Waterloo & Propel Centre for Population Health Impact, Waterloo

Jon Kerner
Canadian Partnership Against Cancer

The symposium will present and discuss a draft cancer prevention research strategic framework for Canada being developed by a steering committee and working group of member organizations of the Canadian Cancer Research Alliance with leadership from the Canadian Cancer Society and the Canadian Partnership Against Cancer. After a 30 minute presentation describing the process of the strategy's development and outlining some exemplar high level recommendations from the draft strategic framework document, a three member panel will reflect on the draft from the perspectives of research, practice, and policy (10 minutes each). The final 30 minutes will be devoted to questions and comments from the audience to the speakers about their views of the strategic framework and how it can be improved.

10:15 a.m. Jon Kerner
Canadian Partnership Against Cancer

10:45 a.m. David Mowat
Peel Public Health, Brampton

10:55 a.m. Donna Turner
CancerCare Manitoba, Winnipeg

11:05 a.m. Marlien McKay
Department of Health and Wellness, Government of New Brunswick, Fredericton

11:15 a.m. Discussion

10:15–11:45 a.m.

D3 – PERSONALIZED MEDICINE: EDUCATION, ETHICS AND ECONOMICS

Chair:
Stuart Peacock
Canadian Centre for Applied Research in Cancer Control; University of British Columbia & BC Cancer Agency, Vancouver

The purpose of this session is to introduce the audience to key interdisciplinary, and hence often related, issues in personalized health care. The session will focus on three perspectives: economics, education and ethics. Following the presentations, the speakers will participate in a panel debate on interdisciplinary issues in moving the science of personalized health care into real-world health programs. Key interdisciplinary question/issues include:

- The health sector is already the largest sector of the economy and faces substantial budgetary pressures. Who will make decisions about implementation of personalized health care? How will these decisions be made? What evidence should researchers and innovators in the field of personalized health care be prepared to produce to help guide these funding decisions? Who will pay for it?
- Novel education programs and platforms will be needed to implement personalized health care. Who will provide information for and help educate the public? Who will help ensure that clinicians are appropriately trained for, and kept up to date with, the newest developments and evidence in personalized health care? Who will educate family practitioners?
- Privacy, data ownership, and the policy frameworks are needed to manage data central to personalized health care. What data are public and who has access to them for what purposes? What role should the public play in the development of novel genomic data technologies, how should scientific evidence be combined with community values, and how should different publics be involved with the implementation of personalized health programs?

10:20 a.m. **PERSONALIZED MEDICINE: A GOOD WAY TO SPEND MORE?**
Jeffrey Hoch
Canadian Centre for Applied Research in Cancer Control

10:40 a.m. **PERSONALIZED MEDICINE: PROFESSIONAL EDUCATION FOR EFFECTIVE DECISION-MAKING**
Brenda Wilson
University of Ottawa, Ottawa

11:00 a.m. **TAILS WAGGING DOGS: THE SOCIAL CONTEXT AND CONSEQUENCES OF PERSONALIZED MEDICINE**
Michael Burgess
W. Maurice Young Centre for Applied Ethics & University of British Columbia, Vancouver

11:20 a.m. Discussion

10:15–11:45 a.m.

D4 – EMERGING THERAPEUTICS: DRUGS

Chair:
Janet Dancey
Ontario Institute for Cancer Research, Toronto; NCIC Clinical Trials Group, Queen's University, Kingston

This symposium will feature new agents in early clinical or late preclinical development affecting a "new generation" of targets and which are demanding more intense trial designs, that may incorporate genomic sequencing of tumours or other biomarker based selection and may require to be tested in combination with other targeted agents for maximal clinical benefit. The speakers will provide an overview of the laboratory and early clinical findings as well as the issues in development of the agents, biomarkers and combinations. Two proffered papers selected from amongst abstracts assessing novel approaches to identification of agents and targets will also be presented.

10:15 a.m. **NEXT GENERATION TARGETS AND AGENTS – EXPANDING THE THERAPEUTIC TARGET PORTFOLIO**
Gordon Shore
McGill University, Montréal

	10:35 a.m.	MATCHING PATIENTS AND TRIALS – WILL GENOMICS AND MATCHING TREATMENT TO PATIENTS IMPROVE DRUG EVALUATION? Lillian Siu Princess Margaret Hospital, Toronto
	10:55 a.m.	MOVING BEYOND EMPIRICAL SELECTION AND TESTING TO TESTING RATIONAL COMBINATIONS Helen Chen National Cancer Institute, Bethesda
	11:15 a.m.	VEGF STICKY-TRAPS AND LASSOS: NOVEL BISPECIFIC ANTIANGIOGENIC BIOLOGICS Iacovos Michael Samuel Lunenfeld Research Institute, Toronto
	11:30 a.m.	TARGETING TUMOUR HYPOXIA: INHIBITION OF TUMOUR GROWTH AND METASTASIS BY NOVEL INHIBITORS OF CARBONIC ANHYDRASE IX Shoukat Dedhar BC Cancer Research Centre, Vancouver
11:45 a.m.	BREAK	

12:00–1:30 p.m.

PLENARY SESSION

Canadian Cancer Society | Société canadienne du cancer

Cancer Research Society | Société de recherche sur le cancer

NEW FRONTIERS IN CANCER RESEARCH

Chair:
Philip Branton
McGill University, Montréal

There is an urgent need to speed the uptake into the clinic of our significant accumulated knowledge about cancer; however, we should never forget that while we often believe that we have sufficient understanding of certain aspects of cancer for successful new treatments, history tells us that we are often amazed by the paradigm shifts in our beliefs brought about by new investigator-initiated research. Today's session provides examples of three lines of research that have changed our views on and our approaches to new cancer therapies.

12:00 p.m.

TRANSLATIONAL CONTROL OF CANCER VIA THE mTOR AND THE MAPK PATHWAYS

Nahum Sonenberg
McGill University, Montréal

Control of translation initiation plays an important role in cell growth, proliferation and cancer development and progression. mRNA translation is dysregulated in many cancers via a combination of protein overexpression and defects in the pathways that signal to the translation machinery. In support of the critical function of translational control in cancer is the discovery of mutations in translational components in genetic syndromes associated with cancer susceptibility.

A key regulator of translation initiation is the mRNA 5'-cap-binding protein, eIF4E. eIF4E overexpression transforms rodent and human cells and causes cancer in mice. eIF4E levels and phosphorylation are elevated in many types of human cancers. Phosphorylation of eIF4E on Ser209 is required for efficient transformation by eIF4E. We recently generated eIF4E 'knock-in' mice in which Ser209 was mutated to alanine. These mice were resistant to prostate cancer induced by PTEN deletion, or cancers induced by other means.

An important downstream component of the PTEN/Akt/mTOR signaling pathway, which is strongly implicated in cancer etiology, is the translation machinery. A well-characterized target of mTOR is 4E-BP1, which binds to eIF4E and inhibits cap-dependent translation. mTOR forms two distinct complexes, mTORC1 and mTORC2. mTORC1 integrates growth factor and nutrient signals to control cell proliferation (increase in cell number) and cell growth (increase in mass). mTORC1 controls these processes by stimulating mRNA translation via phosphorylation of its two major downstream targets: the 4E-binding proteins (4E-BP1, 2 and 3) and the S6 kinases (S6K1 and 2). 4E-BPs impair the assembly of the eIF4F pre-initiation complex by competing with eIF4G for binding to eIF4E, whereas S6Ks phosphorylate a number of targets including ribosomal protein S6 and eIF4B. We showed that the 4E-BPs do not affect cell size, but strongly inhibit cell proliferation, by selectively inhibiting the translation of mRNAs encoding for proliferation-promoting proteins, and proteins involved in cell cycle progression.

The hyperactivation of the mechanistic/mammalian target of rapamycin (mTOR) occurs in the majority of cancers. Therefore, targeted inhibition of mTOR is an attractive anti-cancer strategy. We show that high expression of eIF4E confers increased resistance of cells to the anti-proliferative effects of asTORi. Conversely, depletion of eIF4E levels by RNAi potentiates the anti-neoplastic effects of asTORi in vitro and in vivo. Anti-sense therapy against eIF4E is presently evaluated in clinical trials against cancers. Our data indicate that combining this strategy with targeted mTOR inhibition could have increased therapeutic benefits.

12:25 p.m. **ONE OF THESE THINGS IS NOT LIKE THE OTHERS: HOW GENOMICS IS DRIVING A REVOLUTION IN PERSONALIZED CANCER DIAGNOSIS**

Michael Taylor
The Hospital for Sick Children, Toronto

Early surgeons attempted to classify solid tumours on the basis of the organ or anatomic location of the primary tumour. Subsequently pathologists noted that different tumours from the same anatomic location had different clinical behavior, and that this behavior correlated with histology as seen with the light microscope. Current diagnosis, stratification, and prognostication of most solid tumours in Canada is done using knowledge of the anatomic site of origin, and histological appearance of the primary tumour, with the addition of immunohistochemistry in some cases.

More recently it has become apparent that histologically identical tumours from the same anatomic compartment can have widely differing clinical and molecular characteristics. Using two examples from pediatric neuro-oncology (medulloblastoma and ependymoma) we will demonstrate that through the use of transcriptomics and cancer genetics, some histological diagnoses can be divided into multiple subgroups that are demographically, transcriptionally, genetically, and clinically distinct. Some molecular subgroups are sufficiently different from each other that they are properly regarded as distinct diseases, and will undoubtedly require distinct clinical strategies, particularly for the development of targeted therapies. Among the medulloblastomas, survival rates among the molecular subgroups range from >90% to <5% despite their looking identical under the microscope.

Biomarkers to identify molecular subgroups of cancer discovered in research laboratories on flash frozen samples are often not appropriate or practical for use in randomized, multi-center clinical trials. In the coming years, solid cancers will be diagnosed and classified by anatomy, histology and genomics. Design of appropriate trial-friendly biomarkers developed based on genomic studies will allow subgroup specific clinical trials of targeted therapies.

12:50 p.m. **EVIDENCE FOR THE CLINICAL RELEVANCE OF AML STEM CELLS**

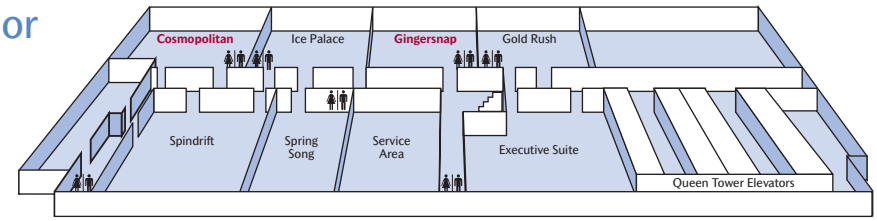
John Dick
Ontario Cancer Institute, Toronto

The cellular and molecular basis for intra-tumoural heterogeneity is poorly understood. Tumour cells can be genetically diverse due to mutations and clonal evolution resulting in intra-tumoural functional heterogeneity. Often proposed as mutually exclusive, cancer stem cell (CSC) models postulate that tumours are cellular hierarchies sustained by CSC heterogeneity due to epigenetic differences (i.e. long term tumour propagation only derives from CSC). The clinical relevance of CSC has been challenged by recent reports that some tumours may actually not adhere to a CSC model when the xenograft system is enhanced. Two lines of evidence support the CSC model in AML and B-ALL. We have recently developed gene signatures specific to either AML LSC or normal HSC and found they share a set of genes that define a common stemness program. Only these stem cell related gene signatures were found to be highly significant independent predictors of patient survival when large clinical databases were introgated. Thus, determinants of stemness influence clinical outcome of AML establishing that LSC are clinically relevant and not artifacts of xenotransplantation. Second, we have carried out a series of combined genetic and functional studies of Ph+ B-ALL leukemic initiating cells (L-IC) that point to commonalities between clonal evolution and CSC models of cancer. L-IC from diagnostic patient samples were genetically diverse and reconstruction of their genetic ancestry showed that multiple L-IC subclones were related through a complex evolutionary process that involved both linear or branching leukemic progression. The discovery that specific genetic events influence L-IC frequency and that genetically distinct L-IC evolve through a complex evolutionary process indicates that a close connection must exist between genetic and functional heterogeneity. Finally, our study points to the need to develop effective therapies to eradicate all genetic subclones in order to prevent further evolution and recurrence.

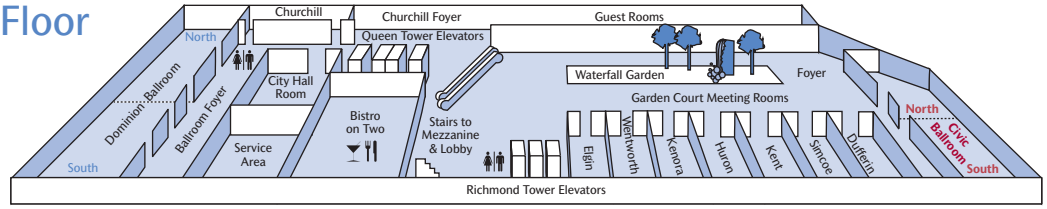
1:15 p.m. Discussion

1:30 p.m. **CONFERENCE CLOSING REMARKS** — Mario Chevrette, Co-Chair, CCRA

4th Floor



2nd Floor



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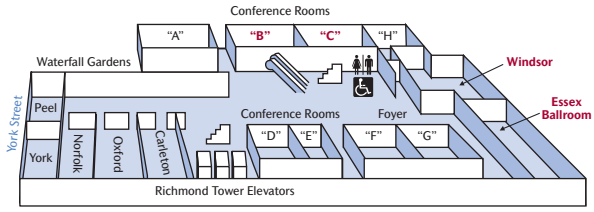

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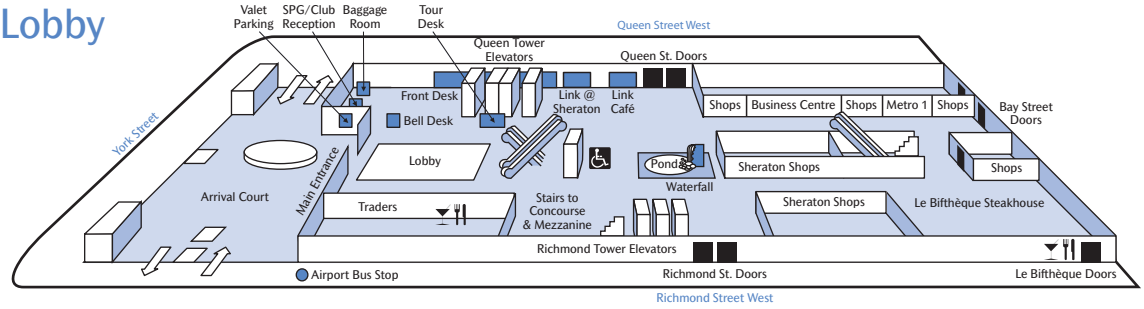
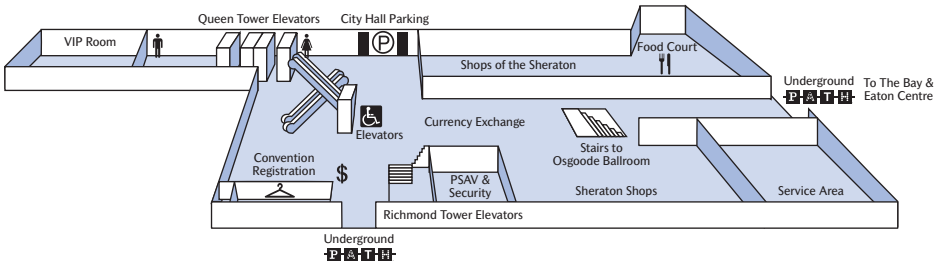
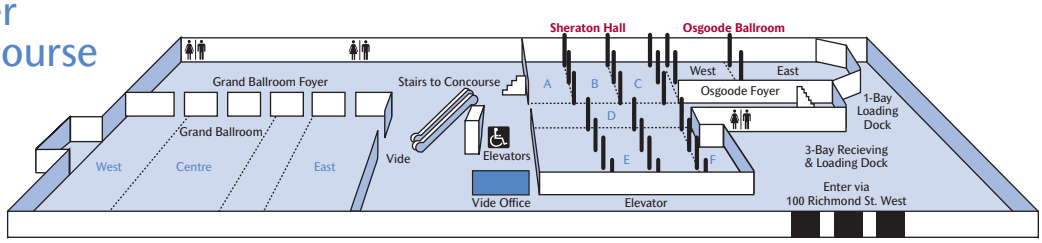


Concourse



Lower Concourse



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