

RADIATION ONCOLOGY

BC CANCER AGENCY

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Our Research

Focus:

The majority of radiation oncologists are clinical faculty with limited protected time for research. Despite this limitation, the faculty are actively involved in primarily clinical research, usually through the conduct of Phase I, II or Phase III clinical trials. The majority of clinical trials are funded through co-operative groups such as NCIC and NSABP, though industry sponsored

trials are becoming more common. Involvement in basic and translational research is primarily through collaboration with scientists and other clinicians at UBC or UVic. There is a growing interest in health services research and this will be a major focus in the coming years.

In the past year, we have developed a significant research program funded through CIHR in Health Services Research in collaboration with the Sauder School of Business at UBC. There is also significant collaboration in developmental brachytherapy with Electrical and Computer Engineering at UBC.

In medical physics there has been significant collaboration with industry and a three year research program partially funded by Varian Oncology Systems is proceeding. Additional areas of active research include Monte Carlo dosimetry, intensity modulated radiotherapy, and new technology development.

Progress Highlights during 2005 and 2006:

In July 2005, the BC Cancer Agency established a Centre of Excellence for Cancer Functional Imaging (Medical Director: Dr. Don Wilson) at the Vancouver Cancer Centre which includes British Columbia's first publicly-funded Positron Emission Tomography / Computer Tomography (PET/CT) scanner. Established as a partnership between BCCA, UBC, Vancouver General Hospital and the Tri-Universities Meson Facility (TRIUMF) at UBC, the Centre of Excellence for Cancer Functional Imaging will improve cancer diagnosis and treatment planning for patients and health care professionals, at the same time building a research program for the discovery, development and application of new radiotracers. In its first 18 months of operation, the Centre has completed 2,600 procedures under a clinical trial agreement with Health Canada.

Key Research Staff:

<i>Researcher name</i>	<i>Position & Cross-Appointments</i>
Thomas J. Keane	Head, Radiation Oncology; Provincial Leader, Radiation Therapy Program, BCCA & Professor, UBC[†]
Alex Agranovich	Radiation Oncologist, FVC & Clinical Assoc Prof, UBC
Abe Alexander	Radiation Oncologist, VIC & Clinical Asst Prof, UBC
William Ansbacher	Senior Medical Physicist, VIC & Adjunct Associate Professor, UVic
Cynthia Araujo	Senior Medical Physicist, CSI
Alistair Baillie	Head Medical Physics CSI; & Clinical Assistant Professor, UBC
Susan Balkwill	Radiation Oncologist, FVC & Clinical Asst Prof, UBC
Erin Barnett	Medical Physicist, FVC
Wayne Beckham	Head Medical Physics VIC; Provincial Leader, Medical Physics, BCCA & Adjunct Associate Professor, UVic
Eric Berthelet	Radiation Oncologist, VIC & Clinical Assoc Prof, UBC
Paul Blood	Radiation Oncologist, VIC & Clinical Asst Prof, UBC
Fred Cao	Medical Physicist, FVC
Hannah Carolan	Radiation Oncologist, VIC & Clinical Instructor, UBC
Roberts Corn	Senior Medical Physicist, FVC & Provincial Radiation Safety Officer
Laura Drever	Medical Physics Resident, VIC
Rustom Dubash	Medical Physicist, (VCC)
Graeme Duncan	Radiation Oncologist, VCC & Clinical Prof, UBC
Cheryl Duzenli	Head Medical Physics(VCC), Adjunct Professor Physics and Astronomy, UBC
Randall Fairey	Radiation Oncologist, CSI & Clinical Assoc Prof, UBC
Isabelle Gagné	Medical Physicist, VIC
Ermias Gete	Senior Medical Physicist, (VCC)
Bradford Gill	Medical Physicist (VCC)
Karen Goddard	Radiation Oncologist, VCC & Clinical Assoc Prof, UBC
Clive Grafton	Radiation Oncologist, VCC & Clinical Assoc Prof, UBC
Ross Halperin	Radiation Oncologist, CSI & Clinical Assoc Prof, UBC
John Hay	Radiation Oncologist, VCC & Clinical Professor, UBC
Michelle Hilts	Medical Physicist, VIC & Adjunct Assistant Professor, UVic
David Hoegler	Radiation Oncologist, CSI & Clinical Asst Prof, UBC
Caroline Holloway	Radiation Oncologist, CSI & Clinical Instructor, UBC
Vicky Huang	Medical Physicist, FVC

[†] Clinicians hold academic appointments in the Division of Radiation Oncology and Developmental Radiotherapeutics, Department of Surgery, UBC. The Provincial Program includes radiation oncologists located at all regional cancer centres of BCCA. Medical physicists also hold academic appointments at the Department of Physics and Astronomy at UBC and UVic as well as the Division of Radiation Oncology and Developmental Radiotherapeutics at UBC.

Howard Joe	Radiation Oncologist, VIC & Clinical Instructor, UBC
Sam Kader	Radiation Oncologist, VIC & Clinical Asst Prof, UBC
Anand Karvat	Radiation Oncologist, FVC & Clinical Asst Prof, UBC
Mira Keyes	Radiation Oncologist, VCC & Clinical Assoc Prof, UBC
David Kim	Radiation Oncologist, CSI & Clinical Instructor, UBC
Charmaine Kim-Sing	Radiation Oncologist, VCC & Clinical Assoc Prof, UBC
Kirpal Kohli	Senior Medical Physicist, FVC
Ed Kostashuk	Radiation Oncologist, FVC & Clinical Professor, UBC
William Kwa	Senior Medical Physicist, (VCC)
Winkle Kwan	Radiation Oncologist, FVC & Clinical Asst Prof, UBC
Stephan Larsson	Radiation Oncologist, VIC & Clinical Asst Prof, UBC
Pamela Leco	Radiation Oncologist, CSI & Clinical Instructor, UBC
Richard Lee	Medical Physicist (VCC)
Wing Yee Leung	General Practitioner/Oncology, VCC & Clinical Instructor, UBC
Carson Leong	Radiation Oncologist, FVC & Clinical Asst Prof, UBC
Wing Yee Leung	Clinical Associate, VCC & Clinical Instructor, UBC
Jan Lim	Radiation Oncologist, VIC & Clinical Asst Prof, UBC
Peter Lim	Radiation Oncologist, VCC & Clinical Assoc Prof, UBC
Mitchell Liu	Radiation Oncologist, FVC & Clinical Asst Prof, UBC
Kurt Luchka	Senior Medical Physicist, (VCC)
Charles Ludgate	Radiation Oncologist, VIC & Clinical Assoc Prof, UBC
Roy Ma	Radiation Oncologist, VCC & Clinical Assoc Prof, UBC
Sheila MacMahon	Senior Medical Physicist, (VCC)
Mo Manji	Radiation Oncologist, FVC & Clinical Assoc Prof, UBC
Michael McKenzie	Radiation Oncologist, VCC & Clinical Assoc Prof, UBC
Marie-Pierre Milette	Junior Medical Physicist
Islam Mohamed	Radiation Oncologist, CSI & Clinical Instructor, UBC
Vitali Moiseenko	Medical Physicist(VCC), Adjunct Professor Physics and Astronomy, UBC
James Morris	Radiation Oncologist, VCC & Clinical Prof, UBC
Alan Nichol	Radiation Oncologist, VCC & Clinical Assoc Prof, UBC
Ivo Olivotto	Radiation Oncologist, VIC & Clinical Professor, UBC
Karl Otto	Medical Physicist, (VCC)
Howard Pai	Radiation Oncologist, VIC & Clinical Asst Prof, UBC
Christina Parsons	Radiation Oncologist, VCC & Clinical Assoc Prof, UBC
David Petrik	Radiation Oncologist, CSI & Clinical Instructor, UBC
Yen Pham	Medical Physicist, VIC

Tom Pickles	Radiation Oncologist, VCC & Clinical Prof, UBC
Milton Po	Radiation Oncologist, FVC & Clinical Asst Prof, UBC
Carmen Popescu	Medical Physicist, VIC
Ionu Popescu	Medical Physicist (VCC), Adjunct Assistant Professor Physics, UVic
Rasika Rajapakshe	Senior Medical Physicist, VIC & Clinical Assistant Professor, UBC
Ramani Ramaseshan	Head Medical Physics FVC; & Adjunct Professor, SFU
Melanie Reed	Radiation Oncologist, CSI & Clinical Asst Prof, UBC
Matthew Schmid	Senior Medical Physicist, CSI
Moira Schmuland	Medical Physicist, (VCC)
Bilal Shahine	Medical Physicist, AHC
Barry Sheehan	Radiation Oncologist, VCC & Clinical Asst Prof, UBC
Ingrid Spadinger	Senior Medical Physicist (VCC), Clinical Instructor, Radiation Oncology and Developmental Radiotherapeutics
Simon Sutcliffe	Radiation Oncologist, VCC; President, BCCA
Carrie-Lynne Swift	Senior Medical Physicist(VCC)
Steven Thomas	Medical Physics Resident(VCC)
Paul Truong	Radiation Oncologist, VIC & Clinical Assoc Prof, UBC
Scott Tyldesley	Radiation Oncologist, VCC & Clinical Asst Prof, UBC
Emily Vollans	Senior Medical Physicist, (VCC)
Nicholas J. Voss	Radiation Oncologist, VCC & Clinical Assoc Prof, UBC
Elaine Wai	Radiation Oncologist, VIC & Clinical Asst Prof, UBC
Larry Watts	Medical Physicist, CSI
Lorna Weir	Radiation Oncologist, VCC & Clinical Assoc Prof, UBC
Derek Wells	Senior Medical Physicist, VIC & Adjunct Assistant Professor, UVic
Don Wilson	Radiation Oncologist, FVC & Clinical Asst Prof, UBC
Jane Wilson	Radiation Oncologist, CSI & Clinical Asst Prof, UBC
Frances Wong	Radiation Oncologist, FVC & Clinical Professor, UBC
Jonn Wu	Radiation Oncologist, VCC & Clinical Asst Prof, UBC
Conrad Yuen	Medical Physicist, (VCC)
Sergei Zavgorodni	Senior Medical Physicist, VIC & Adjunct Associate Professor, UVic
Susan Zhang	Medical Physicist, (VCC)

Training

A) Course Instruction

W Ansbacher	UBC PHYS 432 Intro to Medical Physics
C Araujo	UBC PHYS 534 Radiotherapy Physics I
A Baillie	UBC PHYS 534 Radiotherapy Physics I
W Beckham	UBC PHYS 534 Radiotherapy Physics I
W Beckham	UBC PHYS 432 Introduction to Medical Physics

C Duzenli	UBC PHYS 404 Intro to Medical Physics
C Duzenli	UBC PHYS 539 Radiation Dosimetry
E Gete	UBC PHYS 539 Radiation Dosimetry
S Hussein	BCIT Radiography Technologist Program – Physics Course
V Moiseenko	UBC PHYS 535 Radiotherapy Physics II
V Moiseenko	UBC PHYS 405 Radiation Biophysics
V Moiseenko	UBC PHYS 536 Advanced Radiation Biophysics
T Popescu	UBC PHYS 539 Radiation Dosimetry
T Popescu	UBC PHYS 535 Radiotherapy Physics II
T Popescu	UBC PHYS 404 Physics of Medical Imaging
I Spadinger	UBC PHYS 404 Intro to Medical Physics
I Spadinger	UBC PHYS 535 Radiotherapy Physics II
D Wells	UBC PHYS 432 Intro to Medical Physics
S Zavgorodni	UBC PHYS 534 Radiotherapy Physics I

Radiation Oncologists are involved in the entire training/teaching program for the UBC Radiation Oncology Residency Training Program. Dr. Mira Keyes is Director of the Residency Training Program. All staff participates as teachers.

B.) Summary of Trainees

	<i>Total No. of Current Students</i>	<i>Residents</i>	<i>Physics Residents</i>	<i>Post-graduate Fellows</i>	<i>Undergraduate Medical Students</i>
2005	61	6	1	4	50
2006	79	11	1	5	62

C.) Trainee Awards

<i>Name</i>	<i>Supervisor</i>	<i>Award Received</i>
Tanya Berrang	I Olivotto	CBCF Research Fellowship 2005
Paris Ann Gfeller		5 th Annual Jean Roy Memorial Award Canadian Brachytherapy Group 2005
Paris Ann Gfeller		Best Resident Poster, Canadian Association of Radiation Oncology Annual Meeting 2006
Ante Mestrovic	B Clark, K Otto	NSERC Graduate Scholarship MSFHR Senior Graduate Scholar 2006 -2008
Alanah Bergman	E Grein, C Duzenli	MSFHR Senior Graduate Scholar 2003 - 2005

Selected Personal Awards and Honours

<i>Name</i>	<i>Distinguished Award/Honour</i>
P Blood	BC Cancer Agency Poster Prize in Population Health 2005
M McKenzie	Best Abstract in Clinical and Population-based Oncology, Canadian Association of Radiation Oncology Annual Meeting, 2006
I Olivotto	Silver Anniversary Award, UBC Medicine Gordon Richards Lecturer, Canadian Association of Radiation Oncologists (2006)

Select Current Contributions

<i>Name</i>	<i>Membership/Committee Involvement</i>
M Liu	NCIC – FVC Lung representative
W Ansbacher	Secretary, Canadian Organization of Medical Physicists 2004-2006 President, Canadian Organization of Medical Physicists 2006 -
W Beckham	Registrar, Canadian College of Physicists in Medicine 2003 - Member, NCIC-CTG Radiation Oncology Quality Assurance Committee, 2006
I Gagne	Secretary, Canadian Organization of Medical Physicists 2006 -
J Hay	Board Member, Canadian Radiation Oncology Foundation
T Keane	Member, Royal College of Physicians and Surgeons of Canada Specialty Committee in Radiation Oncology
M Keyes	Member, Royal College of Physicians and Surgeons of Canada Specialty Committee in Radiation Oncology Member, Canadian Association of Radiation Oncology Residency Training Program Director's Liaison Committee
M McKenzie	RAZCER Committee Member, Canadian Association of Radiation Oncology Study Chair, NCICCTG PR.12 Study Member, Symptom Control Committee, NCIC CTG
I Olivotto	Chair, Research Advisory Committee, CBCRA Chair, BCCA Medical Advisory Committee Member, Physicians' Leadership Council, PHSA Member, Breast Site Disease Committee, NCIC CTG
H Pai	Exam writer for adult CNS Oncology, American Board of Radiology Member, Canadian Committee for Patient Accessible Electronic Health Records (CCPAEHR)
T Pickles	President, Canadian Association of Radiation Oncology Executive member, GU Radiation Oncologists of Canada Executive member, NCIC GU Clinical Trials Group Executive member, Canadian Urology Oncology Group (CUOG)
L Weir	Member, Board of Directors, CBCF BC/Yukon and Chair of Medical Advisory Committee Chair, History and Archives Committee, Canadian Association for Radiation Oncology

Radiation Therapy Clinical Trials

For a current list of clinical trials, please refer to www.bccancer.bc.ca/RES/ClinTrials/

BREAST CANCER CLINICAL TRIALS	
1. A clinical trial comparing adjuvant clodronate therapy vs. placebo in early stage breast cancer patients receiving systemic chemotherapy and/or hormonal therapy or no therapy	
Weir L (VCC)	NSABP Opened 2001, Status: Follow-up BRB34

2. A multi-centre randomized trial to determine if accelerated partial breast irradiation, utilizing 3D crt, is as effective as whole breast irradiation following breast conserving surgery in women with ductal carcinoma in situ or invasive breast cancer with negative auxiliary lymph nodes	
Olivotto I (VIC)	OCOG Opened 2006, Status: Open RAPID
3. A phase III study of regional radiation therapy in early breast cancer	
Olivotto I (VIC) Kwan W (FVC)	NCIC Opened 03-Aug-2000, Status: Open BRMA20
4. A phase III trial of observation +/- tamoxifen vs radiotherapy +/- tamoxifen for good risk duct carcinoma in-situ (dcis) of the female breast	
Troung P (VIC) Mohamed I (CSI) Lim P (VCC)	NCIC & RTOG Opened Oct-2002, Status: Closed 1/2006 BRMA26
5. A pilot study to explore prophylactic cranial radiation in patients with stable or responding her2neu + metastatic breast cancer after first or second line chemotherapy plus herceptin	
L Weir (VCC)	CBCF Opened 2005, Status: Open BRTCRAID
6. A randomized phase III study of conventional whole breast irradiation (WBI) versus partial breast irradiation (PBI) for women with stage 0, I, or II breast cancer	
I Olivotto (VIC)	CBCF Opened 2006, Status: Open B-39
7. A randomized trial of accelerated partial breast irradiation: The Canadian RAPID trial	
Leong C (FVC) Sehn L (VCC) Reed M (CSI) Nichol A (VCC)	OCOG Opened May-2006, Status: Open RAPID

GENITOURINARY CLINICAL TRIALS

8. A phase II study of neoadjuvant docetaxel plus neoadjuvant/adjuvant hormone therapy and locoregional radiation therapy for high risk localized adenocarcinoma of the prostate	
McKenzie M (VCC) Bernstein V (VIC)	BCCA/ Industry Opened Apr-2005, Status: Closed GUTBDOC
9. A phase II trial of a soy beverage for subjects without clinical disease with rising prostate specific antigen after radical radiation for prostate cancer	
Kwan W (FVC)	NCIC Opened 01-Sep-2004, Status: Closed Soy

10. A phase III randomized trial comparing intermittent vs. continuous androgen suppression for patients with PSA progression in the clinical absence of distant metastases following radiotherapy for prostate cancer	
Pickles T (VCC) Reed M (CSI) Kwan W (FVC)	NCIC Opened May-2001, Status: Open PR7

HEAD AND NECK CLINICAL TRIALS	
11. A phase III, randomized, double-blind, placebo-controlled study to evaluate the efficacy and safety of weekly doses of palifermin (recombinant human keratinocyte growth factor, rhkgrf) for the reduction of oral mucositis in subjects with advanced head and neck cancer receiving adjuvant radiotherapy and chemotherapy	
Sheehan F (VCC)	Industry Opened 2005, Status: Open Palifermin
12. A phase III randomized, stratified, parallel-group, multi-centre, comparative study of ZD1839(Iressa) 250mg and 500mg versus methotrexate for previously treated patients with squamous cell carcinoma of the head and neck	
Chia S (VCC) Hay J (VCC)	Industry Opened 09-Nov-2004, Status: Follow-up HNTIRMTX
13. A phase III randomized trial of concomitant radiation, cisplatin, and tirapazamine (SR259075) versus concomitant radiation and cisplatin in patients with advanced head and neck cancer	
Leung C (FVC)	Industry Opened 27-Oct-2003, Status: Closed EFC4690
14. A randomized trial of concomitant radiation, cisplatin, and tirapazamine vs. concomitant radiation and cisplatin in patients with advanced head and neck cancer	
Sheehan F (VCC)	Industry Opened 2003, Status: Follow-up HNTPTIRA
15. Phase III randomized trial of concomitant radiation, cisplatin, and tirapazamine (sr259075) versus concomitant radiation and cisplatin in patients with advanced head and neck cancer	
Sheehan F (VCC)	Industry Opened 2006, Status: Follow-up HNTRPTR3
16. Treatment time study for head and neck cancer	
Hay J (VCC)	NCIC Opened 2000, Status: Closed HN3

HEMATOLOGIC CLINICAL TRIALS	
17. A dosimetry and dose escalation study of Lymphorad™-131; Iodine I 131 labeled B lymphocyte stimulator in subjects with relapsed multiple myeloma following autologous stem cell transplant	
Morris J (VCC)	Industry Opened 2004, Status: Follow-up LYTLR131
18. A phase I dosimetry and dose escalation study of lymphorad™-131 (LR131; iodine I 131 labeled B lymphocyte stimulator) in patients with relapsed or refractory multiple myeloma	
Morris J (VCC)	Industry Opened 2005 MYTLR-131
19. Efficacy and safety of subsequent treatment with Y-ibritumomab tiuxetan vs. no further treatment in patients with stage III or IV follicular non-Hodgkin's lymphoma having achieved partial or complete remission after first line chemotherapy	
Pickles T (VCC)	Industry Opened 2001, Status: Follow-up LYTZEV

LUNG CANCER CLINICAL TRIALS	
20. A phase II study of accelerated hypofractionated 3-dimensional conformal radiotherapy (3DCRT) for inoperable stage I/II non-small cell lung cancer (NSCLC)	
Mohamed I (CSI) Karvat A (FVC) Sheehan F (VCC)	NCIC Opened Jul-2006, Status: Open BR.25
21. A phase III comparison of prophylactic cranial irradiation versus observation in patients with locally advanced non-small cell lung cancer	
Mohamed I (CSI)	RTOG through CTSU Opened Jun-2004 RTOG 0214

PROSTATE CANCER CLINICAL TRIALS	
22. A phase II trial of a soy beverage for subjects without clinical disease with rising prostate specific antigen after radical radiation for prostate cancer	
W Kwan (FVC)	Lotte & John Hecht Memorial Foundation Opened 2004, Status: Closed
23. A phase III randomized trial comparing intermittent vs. continuous androgen suppression for patients with prostate-specific antigen progression in the clinical absence of distant metastases following radiotherapy for prostate cancer	
T Pickles (VCC)	NCIC Opened 1998, Status: Follow-up GUPR07

24. A phase III randomized trial comparing total androgen blockade vs. total androgen blockade plus pelvic irradiation in clinical adenocarcinoma of the prostate	
McKenzie M (VCC)	NCIC Opened 1995, Status: Follow-up PR3
25. A phase III trial of radiation therapy with or without casodex in patients with prostate-specific-antigen elevation following radical prostatectomy for pT3N0 carcinoma of the prostate	
McKenzie M (VCC)	NCIC-RTOG Opened 2001, Status: Follow-up GURT9601
26. A project to develop a Canadian brachytherapy database	
Morris J (VCC)	ACURA Award Opened 2006, Status: Open CanBrace
27. A randomized phase II study of androgen suppression combined with elective nodal and dose-escalated radiation therapy	
Morris J (VCC)	Oncura (Grant in Aid) Opened 2002, Status: Follow-up ASCENDE-RT Phase 2
28. A randomized phase II study of androgen suppression combined with elective nodal and dose-escalated radiation therapy	
Morris J (VCC)	Industry & Oncura (Grant in Aid) Opened 2004, Status: Open ASCENDE-RT Phase 3
29. A randomized phase II trial of intensity modulated radiation therapy versus interstitial brachytherapy for prostate cancer	
Morris J (VCC)	Oncura (Grant in Aid) Opened 2006, Status: Open IMVI-RT Pilot
30. Effect of intermittent versus continuous androgen suppression on bone loss and body composition in a phase III randomized trial	
Pickles T (VCC)	NCIC Opened 2005, Status: Open GUPR7.C
31. Image based guidance system for prostate brachytherapy	
Morris J (VCC)	NSERC/CIHR Opened 2006, Status: Open
32. Prospective evaluation of fiducial markers in external beam radiotherapy in prostate cancer	
M Keyes (VCC) S Tyldesley (VCC)	NCIC Opened 2006, Status: Open
33. Study of neoadjuvant docetaxel plus neoadjuvant/adjuvant hormone therapy and locoregional radiation therapy for high-risk localized adenocarcinoma of the prostate	
McKenzie M (VCC)	Industry Opened 2002, Status: Follow-up GUTBDOC

34. Visualization and real time dosimetry for prostate brachytherapy using ultrasound	
Morris J (VCC)	NIH Opened 2006, Status: Open

SYMPTOM MANAGEMENT

35. A randomized phase III double-blind study of ondansetron and dexamethasone vs. ondansetron and placebo in the prophylaxis of radiation induced emesis	
McKenzie M (VCC)	NCIC Opened 2003 SC 19

OTHER CLINICAL TRIALS

36. [18F]-Fluorodeoxyglucose (18F-FDG) positron emission tomography (PET) in oncology	
Wilson D (FVC)	BCCA Opened 2005, Status: Open

