

Curriculum Vitae

DR. BOYD M.C. McCURDY

PERSONAL

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EDUCATION

2001 **Doctor of Philosophy, Physics (Radiotherapy)**
 ✧ University of Manitoba, Winnipeg, Manitoba

1996 **Master of Science, Physics (Nuclear Medicine)**
 ✧ University of Manitoba, Winnipeg, Manitoba

1993 **Bachelor of Science, Honours Applied Physics (Co-op)**
 ✧ University of Waterloo, Waterloo, Ontario

1993 **Bachelor of Education, Physics/Mathematics (I/S Level)**
 ✧ Queen's University, Kingston, Ontario

SABBATICAL LEAVES

Approved Sept. 2007 for 12 month research sabbatical to work with Dr. Peter Greer of the Newcastle Mater Hospital/University of Newcastle, Newcastle, Australia (to take place May 1, 2008 – April 30, 2009). Research topic: “Applications of Radiation Image Prediction to Image Guided Radiation Therapy”.

ACADEMIC APPOINTMENTS

Adjunct Professor Department of Physics and Astronomy, University of Manitoba
Assistant Professor Department of Radiology, University of Manitoba

CERTIFICATIONS

Fellow of the Canadian College of Physicists in Medicine

PROFESSIONAL AFFILIATIONS

Canadian Organization of Medical Physicists (COMP - full member since 2000)
American Association of Physicists in Medicine (AAPM - full member since 2000)
The Australian College of Physical Scientists and Engineers in Medicine (ACPSEM – member since 2007)

CLINICAL EXPERIENCE

- July 2000- present **Medical Physics Department, CancerCare Manitoba, Winnipeg, Manitoba**
Medical Physicist (full time position)
- ✧ leader of IMRT clinical implementation team
 - ✧ leader of Treatment Planning Physics team (since Jan. 2006)
 - ✧ radiotherapy treatment plan checking (irregular, 2D, 3D, TBI)
 - ✧ radiotherapy treatment consults (patient setup, electron treatment dosimetry)
 - ✧ experience with Philips-ADAC (Pinnacle³), CMS (Focus), and MDS-Nordion (Helax) treatment planning systems
 - ✧ commissioning of new treatment planning software and version upgrades within treatment planning systems
 - ✧ provide technical support to Treatment Planning and Radiation Oncology
 - ✧ leader of Treatment Planning Quality Assurance Review team
 - ✧ leader of Portal Imaging team
 - ✧ physics lead in clinical implementation of 3D-CRT for both prostate and breast cancer treatments under RTOG P0126 and RTOG 0413 protocols, respectively
 - ✧ Treatment Planning liason with Dosimetry team
 - ✧ regular member of equipment selection committees (linear accelerators, CT simulators, treatment planning systems)
- Jan. 1999-June 2000 **Medical Physics Department, CancerCare Manitoba, Winnipeg, Manitoba**
Medical Physics Resident (half-time position)
- Dosimetry Rotation:***
- ✧ acceptance testing and commissioning of a linear accelerator
 - ✧ collection of beam data for CMS and Helax treatment planning systems
 - ✧ verification of beam data for treatment planning systems
 - ✧ primary and secondary dose calibrations
 - ✧ monthly portal imaging system QA
 - ✧ monthly QA for linear accelerators and cobalt treatment units, simulators (both conventional and CT), multileaf collimator, virtual wedge, and Keithley Trackers (daily output check tool)
 - ✧ miscellaneous dosimetry duties included: transmission factor measurements, daily output checks, electron cut-out measurements/estimation, TLD preparation and reading
- Brachytherapy Rotation:***
- ✧ daily QA (source activity, indexer length, imaging equipment)
 - ✧ experience with Nucletron microSelectron NPS treatment planning system
 - ✧ provided physics support for treatment planning of cervix, base of tongue, and keloid treatments
 - ✧ performed source changes
- Jan 1996 – Aug 1998 **Medical Physics Department, CancerCare, Winnipeg, Manitoba**
Dosimetrist (vacation and sick leave coverage)
- ✧ duties included output checks on Siemens MX2, MD2, KD2 linear accelerators and Theratronics DXT orthovoltage unit, TLD calibration and reading

CLINICAL DEVELOPMENT

July 2000- present

Medical Physics Department,

CancerCare Manitoba, Winnipeg, Manitoba

- ✧ 2006-2007 - Physics lead for implementing IMRT program.
- ✧ 2005-2006 - Physics lead for enabling Radiotherapy Simulations on a local PET/CT scanner (Siemens Biograph 16). This involved retrofitting the suite with wall mounted lasers, commissioning tests for simulation, development of an ongoing QA program, procedural write-up for RT's, as well as implementation of a Radiation Protection Risk Assessment program for RT's involved.
- ✧ 2004 - Lead a multidisciplinary team (including treatment planning, treatment floor, and Radiation Oncology) to completely renovate portal imaging procedures in our radiotherapy clinic
- ✧ Dec. 2002 - Feb. 2003 - Managed five members of the Radiation Therapy Section in the commissioning and clinical implementation of six Philips Pinnacle³ treatment planning systems (TPS). Note that this was a new TPS vendor for our clinic.
- ✧ 2002-present - Developed and refined image verification techniques for a new patient treatment protocol for dose-escalated prostate patients (three-dimensional conformal radiation therapy for prostate cancer). Daily prostate targeting with an intra-fraction setup correction based on position of implanted, radio-opaque markers is now employed for these patients.
- ✧ 2001-2002 - Implemented image fusion software on treatment planning systems allowing utilization of any archived patient image data from external Radiology Departments for planning of radiation treatments.
- ✧ 2000 - Lead effort to convert dose calculation algorithms from relative to absolute dose basis (on CMS planning systems used at the time), thereby improving departmental efficiency and allowing access to more advanced planning tools

RESIDENCY PROGRAM INVOLVEMENT

Fall 2001-present

Medical Physics Department,

CancerCare Manitoba, Winnipeg, Manitoba

- ✧ actively involved in Treatment Planning training, program organisation, and evaluation of Radiation Oncology Physics Residents (to date: James Beck, Kyle Malkoske, Charles Schroeder, Conrad Yuen, Keith Nakonechny, Mike Sattarivand, Jim Wu)

RESEARCH EXPERIENCE

My main research efforts are spent in the following five research projects at CancerCare Manitoba. I am primary investigator for projects 1, 3, 4, and 5, and a primary collaborator for project 2.

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|--------------------|--|
| Sept. 2004-present | 1) Portal Dosimetry for Radiotherapy Treatment Verification <ul style="list-style-type: none">✧ portal dosimetry for static and dynamic MLC IMRT delivery using Varian Medical System aS500 and aS1000 detectors (also see Supervising section) |
| Dec. 2003-present | 2) Magnetic Resonance Spectroscopic Imaging for Prostate <ul style="list-style-type: none">✧ improving Magnetic Resonance Spectroscopy imaging techniques and incorporating these images into routine radiotherapy treatment planning for improved prostate cancer diagnosis and treatment (also see Grants section and Supervising section)✧ this is a collaborative project with Dr. Lawrence Ryner of the Institute for Biodiagnostics, National Research Council of Canada |
| Sept. 2002-present | 3) Radiotherapy Gantry Angle Optimization <ul style="list-style-type: none">✧ fast gantry angle optimization techniques for 3D conformal radiation therapy and IMRT (also see Supervising section) |
| Sept. 2002-present | 4) Automated Compensator Exchanging Device <ul style="list-style-type: none">✧ developing an automated physical compensator exchanging device for IMRT delivery (also see Grants section)✧ developing a method to perform fast quality assurance of complex physical compensators |
| May 2002-present | 5) Daily Prostate Targeting via Tracking of Implanted Fiducial Markers <ul style="list-style-type: none">✧ modified an existing technique to allow increased accuracy of prostate cancer treatments while minimizing treatment times✧ when program began clinically, only one of 3 centres in Canada to offer this✧ currently, patient data is being compiled and analysed for future publication |

Summary of research projects I was involved with in the past:

- Jan 1996 – March 2001 **Medical Physics Department, CancerCare Manitoba, Winnipeg, MB**
Graduate Research Assistant, Ph.D. level
- ✧ Development of exit dosimetry calculation algorithms for electronic portal imaging
 - ✧ First person to publish predictive algorithm results using the newest generation of portal imaging detector systems (amorphous-silicon flat panels)
 - ✧ Extensive experience with EGS4 and BEAM Monte Carlo based radiation transport simulation computer packages
- Sept 1993 - Dec 1995 **Medical Physics Department, CancerCare Manitoba, Winnipeg, MB**
Graduate Research Assistant, M.Sc. level
- ✧ Developed fully automated left ventricle identification technique based on the use of fuzzy clustering, for application to gated cardiac studies
 - ✧ Experience with many image processing algorithms including: region growing, edge detection, gradient migration, frequency filtering, and morphological processing.
- April 1993 - Aug 1993 **Systems Analysis Branch, Atomic Energy of Canada Limited (AECL),**
April 1992 - Aug 1992 **Pinawa, MB; Research Assistant**
- ✧ Computer modeling of heat transfer from fuel rods during postulated loss-of-coolant accidents in CANDU reactors
- Sept 1992 - April 1993 **School of Optometry, University of Waterloo, Waterloo, ON;**
Fourth Year Thesis Research
- ✧ Computer modeling of fish eye optics using ray tracing techniques
- Jan 1990 - April 1990 **Experimental Studies Division, Atmospheric Environment Service (AES),**
May 1989 - Aug 1989 **Toronto, ON; Solar Radiation Research Assistant**
- ✧ Projects included: Extraterrestrial spectrum correction theory, transmission factor theory for clear sky measurements of UV-B radiation, UV-B spectral irradiance computer modeling, and instrument calibration

TEACHING EXPERIENCE

- Fall 2006 **Department of Physics, University of Manitoba, Winnipeg, MB**
✧ Teaching graduate level physics course ‘Medical Radiation Physics’ (PHYS7360 at University of Manitoba, previously 16.736; course content covers the popular ‘Attix’ text)
- Summer 2005 **Department of Physics, University of Manitoba, Winnipeg, MB**
✧ Taught graduate level physics course based on Medical Radiation Physics course (16.736 at the University of Manitoba) as a reading course (offered under 16.744)
- Fall 2002, 2004 **Department of Physics, University of Manitoba, Winnipeg, MB**
✧ Taught graduate level physics course ‘Medical Radiation Physics’ (16.736 at University of Manitoba; course content covered the popular ‘Attix’ text)
- 2001-present **Department of Physics, University of Manitoba, Winnipeg, MB**
✧ Taught various labs as a component of the Methods of Medical and Health Physics 2 lab course (16.747) including computed tomography simulation and treatment planning labs
- 2001-present **School of Radiation Therapy, CancerCare Manitoba, Winnipeg, MB**
✧ Taught various lectures for the School of Radiation Therapy
- Sept 1993 - Dec 1998 **Department of Physics, University of Manitoba, Winnipeg, MB**
✧ First year physics lab instructor
- Aug 1991 - April 1993 **Department of Physics, University of Waterloo, Waterloo, ON**
✧ Year 1 Physics Help Centre instructor
- Sept 1991 - Dec 1991 **Mayfield Secondary School, Brampton, ON**
✧ Co-op teaching term, taught science and physics at grades 9, 10 and OAC levels
- Sept 1990 - Dec 1990 **Sir Oliver Mowat Collegiate Institute, Scarborough, ON**
✧ Co-op teaching term, taught physics at grade 12 level

SUPERVISING/COMMITTEE EXPERIENCE

At the Medical Physics Department, CancerCare Manitoba, Winnipeg, MB:**Current Students**

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| Sept. 2006-present | Currently supervising Dr. Muoi Tran (post-doctoral researcher) - portal dosimetry project |
| Sept. 2004-present | Currently supervising Ms. Krista Chytk (Ph.D. level) - portal dosimetry project |
| Sept. 2004-present | Currently supervising Mr. Niranjan Venugopal (Ph.D. level) - MRS imaging project |
| Sept. 2002-present | Currently supervising Mr. Peter Potrebko (Ph.D. level) - gantry angle optimization project |

Former Students

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| Sept 2001 - June 2004 | Successfully supervised Mr. Niranjan Venugopal to the completion of his M.Sc. in Physics (M.Sc. granted by University of Manitoba). Thesis title: "Image registration for radiotherapy applications" |
| May 2003-Aug. 2003 | Supervised NSERC summer student Connor Kupchak (undergraduate level) |

Graduate Student Committees*

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| April 2007 – present | Serving as committee member of Mr. Adam Graves Ph.D. committee. Research topic: "Image reconstruction for gravitational lensing" in astrophysics. |
| Jan. 2007 | Served as committee member of Mr. David Niven's M.Sc. committee. (M.Sc. granted by University of Manitoba). Thesis title: "Monte Carlo Investigations of the Effects of an IMRT Compensator on Linear Accelerator Beam Output" |
| Sept 2002 – Mar. 2007 | Served as committee member of Mr. Eric Van Uytven's Ph.D. committee (Ph.D. granted by University of Manitoba). |
| Dec. 2006 | Served as committee member of Ms. Maryam Samiee's M.Sc. committee (Faculty of Engineering). Thesis title: "Semi-automatic prostate segmentation in MR images based on flow orientation " |
| June 2005 | Served as committee member of Mr. Ryan Rivest's M.Sc. committee (M.Sc. granted by University of Manitoba). Thesis title: "Monte Carlo Investigation of 3D Conformal Electron Beam Radiotherapy in Head and Neck Cancer" |
| Sept 2004 | Served as committee member of Mr. Keyvan Jabbari's M.Sc. committee (M.Sc. granted by University of Manitoba). Thesis title: "Automatic extraction of patient setup features using portal images" |
| Oct 2003 | Served as committee member of Ms. Heather Andres' M.Sc. committee (M.Sc. granted by University of Manitoba). Thesis title: "An Analysis of Attenuation Effects Introduced by the Use of Beam-Modifying Filters in Radiation Therapy Treatment Beams" |
| Jan. 2002 | Served as committee member of Mr. Kyle Malkoske's M.Sc. committee (M.Sc. granted by University of Manitoba). Thesis title: "Design and Verification of an Automated Compensator Process" |
| Dec. 2001 | Served as committee member of Mr. James Beck's M.Sc. committee (M.Sc. granted by University of Manitoba). Thesis title: "Evaluation of the Dosimetric Accuracy in the Presence of Inhomogeneities of Two Commercial Electron Planning Systems" |

Medical Physics Graduate Program Committee

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| July 2000-present | Active participant in local graduate program committee (meetings held semi-annually, or more frequently as needed) |
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AWARDS AND HONOURS

- Mar. 2007 ✧ **Invited speaker**, Western Canadian Radiation Therapy Conference, Edmonton, AB
- April 2006 ✧ **Invited speaker**, Peter MacCallum Cancer Center, Melbourne, VIC, Australia
- Mar. 2006 ✧ **Invited speaker**, Newcastle-Mater Hospital, Newcastle, NSW, Australia
- July 2005 ✧ **Recipient of the 2005 H.E. Johns Travel Award** (awarded annually to a recent entrant of the Canadian College of Physicists in Medicine)
- Sept. 2004 ✧ **Invited speaker**, Atlantic Medical Physicists Conference, St. John's, NL
- July 2003 ✧ **AAPM Travel Scholarship recipient**, to attend the AAPM Summer School on State of the Art in IMRT, Colorado Springs, CO
- July 2002 ✧ **Recipient of the 2001 Sylvia Fedoruk Prize in Medical Physics (Best Research Paper in the field of Medical Physics, published by a Canadian author)**
- Fall 2001 ✧ nominated as departmental choice for the NSERC Ph.D. Dissertation Award by the Physics and Astronomy Department, University of Manitoba
- Sept 1998 – July 2000 ✧ Beneficiary of a Manitoba Health Research Council studentship award
- Sept 1996 - Aug 1998 ✧ Beneficiary of a University of Manitoba studentship award
- Feb 1996 ✧ Invited speaker, Nuclear Medicine Rounds, Health Sciences Centre, Winnipeg
- July 1995 - June 1997 ✧ Beneficiary of an Manitoba Cancer Treatment and Research Foundation studentship award
- Sept 1993 - Aug 1995 ✧ Beneficiary of an **NSERC PGS-A studentship** award
- May 1993 – Aug 1993 ✧ NSERC Summer Employment Award, Atomic Energy of Canada Limited
- May 1993 ✧ Graduated from University of Waterloo on Dean's Honour List
- April 1993 ✧ Winner of University of Waterloo Physics annual research poster contest
- 1988 - 1993 ✧ Recipient of a **Canada Scholarship**
- 1988 ✧ Winner of **Governor-General's Award of Excellence** (Bronze Level)
- 1988 ✧ McEachern Memorial Scholarship, held at University of Waterloo
- 1988 ✧ Ontario Provincial Police District Three Award, held at University of Waterloo

PROFESSIONAL VOLUNTEER WORK

- Aug. 2003-present ✧ Communications Committee member of COMP
- Aug. 2003-July 2006 ✧ Editor of *InterACTIONS*, the quarterly professional newsletter of the Canadian Organization of Physicists in Medicine (COMP) and the Canadian College of Physicists in Medicine (CCPM)
- July 2000-present ✧ active reviewer for the peer-reviewed journals: *Medical Physics*, *Physics in Medicine and Biology*, and *IEEE Transactions on Medical Imaging*.
- Dec. 2004-present ✧ acting Associate Editor for *Medical Physics*

CONFERENCES/WORKSHOPS ATTENDED

- ✧ Canadian Organization of Medical Physicists Annual Meeting, Toronto, ON, Oct. 9-13, 2007.
- ✧ Fifteenth International Conference on the use of Computers in Radiation Therapy, Toronto, ON, June 4-7, 2007.
- ✧ Western Canadian Medical Physics Meeting, Edmonton, AB, March, 2007.
- ✧ Canadian Organization of Medical Physicists Annual Meeting, Saskatoon, SK, May 31-June 3, 2006.
- ✧ Ninth International Electronic Portal Imaging Workshop, Melbourne, Australia, April 8-12, 2006.
- ✧ Canadian Organization of Medical Physicists Annual Meeting, Hamilton, ON, July 6-9, 2005.
- ✧ Atlantic Medical Physicists Conference, St. John's, NL, Sept. 24-25, 2004.
- ✧ American Association of Physicists in Medicine Annual Meeting, Pittsburgh, PA, July 25-29, 2004.
- ✧ Canadian Organization of Medical Physicists Annual Meeting, Winnipeg, MB, June 13-16, 2004.
- ✧ Western Canadian Medical Physics Meeting, Victoria, BC, March, 2004.
- ✧ AAPM Summer School: IMRT – State of the Art, Colorado Springs, CO, June 22-26, 2003.
- ✧ Western Canadian Medical Physics Meeting, Winnipeg, MB, March 19-22, 2003.
- ✧ ASTRO IMRT Workshop, San Diego, CA, February 6-7, 2003.
- ✧ Canadian Organization of Medical Physicists Annual Meeting and American Association of Physicists in Medicine Annual Meeting (Joint), Montreal, PQ, July 14-18, 2002.
- ✧ Western Canadian Medical Physics Meeting, Thunder Bay, ON, March 13-16, 2002.
- ✧ Conformal Prostate Working Group Site Visit, Princess Margaret Hospital and Toronto-Sunnybrook Regional Cancer Centre, Toronto, ON, Jan. 9-10, 2002.
- ✧ Canadian Organization of Medical Physicists Annual Meeting, Kelowna, BC, July 11-14, 2001.
- ✧ Consensus Development Workshop on Three Dimensional Conformal External Beam Radiotherapy for Organ-Confining Prostate Cancer, Winnipeg, MB, April 28, 2001.
- ✧ ASTRO 3D Conformal Radiation Therapy Workshop, Dallas, TX, March 1-3, 2001.
- ✧ World Congress on Medical Physics and Biomedical Engineering, Chicago, IL, July 24-27, 2000.
- ✧ Western Canadian Medical Physics Meeting, Saskatoon, SK, March 30-31, 2000.
- ✧ Canadian Organization of Medical Physicists Annual Meeting, Sherbrooke, PQ, June 15-18, 1999.
- ✧ Western Canadian Medical Physics Meeting, Kelowna, BC, March 11-13, 1999.
- ✧ Fifth International Workshop on Electronic Portal Imaging, Phoenix, AZ, Oct. 28-31, 1998.
- ✧ American Association of Physicists in Medicine Annual Meeting, San Antonio, TX, Aug. 8-13, 1998.
- ✧ OMEGA/BEAM Workshop, Oct. 6-13, 1996.
- ✧ Canadian Organization of Medical Physicists Annual Meeting, Montreal, PQ, June 4-7, 1995.
- ✧ Western Canadian Medical Physics Meeting, Winnipeg, MB, March, 1995.
- ✧ Canadian Organization of Medical Physicists Annual Meeting, Toronto, ON, June, 1994.

GRANTS

1. **P.Greer, B.M.C. McCurdy**, On-line Verification of Patient Dose Delivery, (\$25,000 AUS), Newcastle Mater Hospital, Newcastle, NSW, Australia, 2008-2009.
2. **B.M.C. McCurdy**, S Pistorius, Development of Diagnostic Tools for Clinical Portal Dose Image Comparison, (\$135,000 CDN), Varian Medical Systems and CancerCare Manitoba Foundation, 2006-2008.
3. LN Ryner, **B.M.C. McCurdy**, T Bezabeh, L LeBoldus, J Butler, D Hossain, ICP Smith, Magnetic Resonance Spectroscopic Imaging for Improved Treatment Planning of Prostate Cancer, (\$58,500 CDN), Prostate Cancer Research Foundation of Canada, 2004-2005.
4. **B.M.C. McCurdy**, K Furutani, K Malkoske, An Automated Compensator Exchanging Device, (\$46,500 CDN), CancerCare Manitoba Foundation, 2003-2004.

REFEREED PAPERS

1. P.S. Potrebko, **B.M.C. McCurdy**, “A New Paradigm for Improving IMRT: Selection of Beam Orientations by Optimizing Beam Intersection Volume”, submitted to *Med. Phys.*, Dec., 2007.
2. P.S. Potrebko, **B.M.C. McCurdy**, J.B. Butler, and A. El-Gubtan, “Improving Intensity-Modulated Radiation Therapy using the Anatomic Beam Orientation Optimization Algorithm”, submitted to *Med. Phys.*, Nov., 2007.
3. P.S. Potrebko, **B.M.C. McCurdy**, J.B. Butler, A. El-Gubtan, Z. Nugent, “A simple geometric algorithm to predict optimal starting gantry angles using equiangular-spaced beams for intensity modulated radiation therapy of prostate cancer”, *Med. Phys.*, **34**(10):3951-3961, 2007.
4. P.S. Potrebko, **B.M.C. McCurdy**, J.B. Butler, A. El-Gubtan, Z. Nugent, “Optimal starting gantry angles using intensity modulated radiation therapy for prostate cancer on RTOG 0126: A clinical study of 5 and 7 equiangular-spaced beams”, *Radiother. Oncol.*, **85**(2):299-305, 2007.
5. K. Chytyk and **B.M.C. McCurdy**, “Investigation of tilted dose kernels for portal dose prediction in a-Si electronic portal imagers”, *Med. Phys.*, **30**(9):3333-3339, 2006.
6. N. Venugopal, **B.M.C. McCurdy**, A. Hnatov, A. Dubey, “A feasibility study to investigate the use of thin-plate splines to account for prostate deformation” *Phys. Med. Biol.*, **50**(6):2871-2885, 2005.
7. **B.M.C. McCurdy**, and S. Pistorius, “Radiotherapeutic Exit Dosimetry: Closing the Radiotherapy Chain”, *Physics in Canada*, **58**(2):71-77, 2002.
8. **B.M.C. McCurdy**, K. Luchka, and S. Pistorius, “Dosimetric investigation and portal dose image prediction using an amorphous silicon electronic portal imaging device”, *Med. Phys.*, **28**(6):911-24, 2001.
9. **B.M.C. McCurdy** and S. Pistorius, “A two step algorithm for predicting portal dose images in arbitrary detectors”, *Med. Phys.*, **27**(9):2109-16, 2000.
10. **B.M.C. McCurdy** and S. Pistorius, “Photon scatter in portal images: Accuracy of a fluence based pencil beam superposition algorithm”, *Med. Phys.*, **27**(5):913-922, 2000.
11. **B.M.C. McCurdy** and S. Pistorius, “Photon scatter in portal images: Physical characteristics of pencil beam kernels generated using the EGS Monte Carlo code”, *Med. Phys.*, **27**(2):312-320, 2000.
12. **B.M.C. McCurdy** and S. Pistorius, “Determination of equivalent photon fields through integrated convolution kernels”, *Phys. Med. Biol.*, **44**:2971-2985, 1999.

NONREFEREED PAPERS

1. S. Pistorius and **B.M.C. McCurdy**, “Exit Dosimetry: Quo vadis”, *InterACTIONS*, Professional Newsletter of the Canadian Organization of Medical Physicists, Oct. 2002.
2. **B.M.C. McCurdy**, “Development of a Portal Dose Image Prediction Algorithm for Arbitrary Detector Systems”, Ph.D. Thesis, University of Manitoba, March, 2001.
3. **B.M.C. McCurdy**, “Automated Left Ventricle Detection in Gated Radionuclide Ventriculography via Fuzzy Clustering”, M.Sc. Thesis, University of Manitoba, April, 1996.
4. **B.M.C. McCurdy**, and Q.M. Lei, “Estimation of Pressure-Tube to Calandria-Tube Contact Conductance Using Experimental Data With CONTACT-1”, SAB-TN-486, Internal Report, Atomic Energy of Canada Limited, 1993 (Protected Proprietary).
5. **B.M.C. McCurdy**, and Q.M. Lei, “Quality Assurance: Installation of CONTACT-1 Version 2”, SAB-TN-410, Internal Report, Atomic Energy of Canada Limited, 1992 (Protected Proprietary).

ABSTRACTS AND CONFERENCE PROCEEDINGS

1. K. Chytyk and **B.M.C. McCurdy**, “Development of a comprehensive fluence model for portal dose image prediction” Canadian Organization of Medical Physicists Annual Conference, Toronto, ON, October 2007 (Abstract).
2. M. Tran, **B.M.C. McCurdy**, and S. Pistorius, “Artificial Neural Network as a Tool for Clinical Portal Dose Image Comparison” Canadian Organization of Medical Physicists Annual Conference, Toronto, ON, October 2007 (Abstract).
3. P. Potrebko, **B.M.C. McCurdy**, James Butler, and Adel El-Gubtan, “Improving Intensity-modulated Radiation Therapy Using the Anatomic Beam Orientation Optimization Algorithm.” Canadian Organization of Medical Physicists Annual Conference, Toronto, ON, October 2007 (Abstract).
4. N. Venugopal, **B.M.C. McCurdy**, and L. Ryner, “Cutting the Fat: Reducing periprostatic lipid contamination in Prostate MRSI” Canadian Organization of Medical Physicists Annual Conference, Toronto, ON, October 2007 (Abstract).
5. M. Tran, **B.M.C. McCurdy**, and S. Pistorius, “Artificial Neural Networks Approach For Clinical Portal Dose Image Comparison” American Association of Physicists in Medicine Annual Conference, Minneapolis, MN, July 2007 (Abstract).
6. P. Potrebko, **B.M.C. McCurdy**, James Butler, Adel El-Gubtan, and Zoann Nugent. “A Simple Geometric Algorithm to Predict Optimal Starting Gantry Angles Using Equiangular-spaced Beams for Intensity Modulated Radiation Therapy of Prostate Cancer” American Association of Physicists in Medicine Annual Conference, Minneapolis, MN, July 2007 (Abstract).
7. N. Venugopal, **B.M.C. McCurdy**, and L. Ryner. “In vivo prostate MRSI using an improved outer volume suppression technique” American Association of Physicists in Medicine, Minneapolis, MN, July 2007 (Abstract).
8. L. Ryner, N. Venugopal, and **B.M.C. McCurdy**, “Improved Outer Volume Suppression for Prostate MR Spectroscopic Imaging” International Society for Magnetic Resonance in Medicine. Berlin, Germany, June, 2007 (Abstract).
9. **B. McCurdy**, “Current and Future Use of IMRT in Canada”, Western Canadian Medical Physics Conference, Edmonton, AB, 2007 (Abstract).
10. N. Venugopal, **B.M.C. McCurdy**, and L. Ryner, “A 3D model-based outer volume suppression technique for MR spectroscopic imaging of the prostate” International Society of Magnetic Resonance in Medicine Workshop on Data Processing for MR Spectroscopy and Imaging, Warrenton, VI, USA, November, 2006 (Abstract).
11. N. Venugopal, **B.M.C. McCurdy**, L. Ryner, “Optimization of Outer Volume Suppression for Improved Prostate MR Spectroscopic Imaging” American Association of Physicists in Medicine Annual Meeting, Orlando, FL, July 2006 (Abstract).
12. K. Malkoske, **B.M.C. McCurdy**, and D. Rickey, “Evaluation of three calibration techniques for amorphous silicon EPID dosimetry”, International Conference on Quality Assurance and New Techniques in Radiation Medicine, Vienna, Austria, Nov., 2006. (Abstract)

13. **B.M.C. McCurdy**, D. Rickey, and K. Malkoske, "Accounting for off-axis detector response for improved a-Si EPID dosimetry", Canadian Organization of Medical Physics Annual Meeting, Saskatoon, SK, May, 2006. (Abstract)
14. P.S. Potrebko, **B.M.C. McCurdy**, "Is there an optimal starting angle for equiangular-spaced beam arrangements in IMRT?", Canadian Organization of Medical Physics Annual Meeting, Saskatoon, SK, June, 2006. (Abstract)
15. K.Chytyk, **B.M.C. McCurdy**, "Uncertainty of the parallel dose kernel assumption in portal dose prediction with a-Si electronic portal imagers", Canadian Organization of Medical Physics Annual Meeting, Saskatoon, SK, June, 2006. (Abstract)
16. N. Venugopal, **B.M.C. McCurdy**, "Tracking intraprostatic volumes for determining non-linear warping algorithm variability", Canadian Organization of Medical Physics Annual Meeting, Saskatoon, SK, June, 2006. (Abstract)
17. **B.M.C. McCurdy**, D. Rickey, and K. Malkoske "Directly measuring off-axis detector response for improved accuracy of amorphous-silicon EPID dosimetry," 9th International Workshop on Electronic Portal Imaging, Melbourne, Australia, April, 2006. (Abstract)
18. K. Chytyk and **B.M.C. McCurdy**, "Investigation of tilted dose kernels for portal dose prediction in amorphous silicon EPIDs," 9th International Workshop on Electronic Portal Imaging, Melbourne, Australia, April, 2006. (Abstract)
19. **B.M.C. McCurdy**, N. Venugopal, and L. Ryner, "Magnetic Resonance Spectroscopy Imaging of the Prostate for Cancer Diagnosis and Treatment: Current Status and Challenges" Peter MacCallum Cancer Center, April 7, 2006. (**Invited Talk**)
20. **B.M.C. McCurdy**, N. Venugopal, and L. Ryner, "Magnetic Resonance Spectroscopy Imaging of the Prostate for Cancer Diagnosis and Treatment: Current Status and Challenges", Newcastle Mater Misericordiae Hospital, March 23, 2006. (**Invited Talk**)
21. P. Potrebko, **B. McCurdy**, "Gantry Angle Optimization for Conventional Radiotherapy, Canadian Organization of Medical Physics Annual Meeting, Hamilton, ON, July, 2005. (Abstract)
22. K. Chytyk, **B. McCurdy**, "Investigation of tilted dose kernels for portal dose prediction in a-Si electronic portal imagers", Canadian Organization of Medical Physics Annual Meeting, Hamilton, ON, July, 2005. (Abstract)
23. **B. McCurdy**, "Clinically driven research projects at CCMB: (1) Daily fiducial marker tracking for prostate patients, and (2) Automated compensator exchanger for IMRT delivery" Atlantic Medical Physicists Meeting, St. John's, NL, Sept. 2004. (Invited talk)
24. **B. McCurdy**, K. Malkoske, "An automated compensator exchanger (ACE) for IMRT: seven-field, linear-exchange prototype" American Association of Physicists in Medicine Annual Meeting, Pittsburgh, PA, July 2004. (Abstract)
25. N. Venugopal and **B. McCurdy**, "Fast Three Dimensional Non-Linear Warping: Targeting of Prostate Cancer using Magnetic Spectroscopic Images" American Association of Physicists in Medicine Annual Meeting, Pittsburgh, PA, July 2004. (Abstract)
26. **B. McCurdy**, "Daily Targeting of Prostate Through EPID Visualization of Implanted Markers", Canadian Organization of Medical Physics Annual Meeting, Winnipeg, MB, June, 2004. (Abstract)
27. P. Potrebko and **B. McCurdy**, "Gantry angle optimization for conventional radiotherapy", Canadian Organization of Medical Physics Annual Meeting, Winnipeg, MB, June, 2004. (Abstract)

28. P. Potrebko, S. Pistorius, and **B. McCurdy**, “A broad beam analytical photon scatter model employing convolution techniques”, Canadian Organization of Medical Physics Annual Meeting, Winnipeg, MB, June, 2004. (Abstract)
29. N. Venugopal, **B. McCurdy**, A. Hnatov, “Fast Three Dimensional Non-Linear Warping: Target Localization of Intraprostatic Lesions using Magnetic Resonance Spectroscopic Images”, Canadian Organization of Medical Physics Annual Meeting, Winnipeg, MB, June, 2004. (Abstract)
30. **B. McCurdy**, and K. Malkoske, “ACE: More than just playing cards”, Western Canadian Medical Physics Conference, Victoria, BC, 2004 (Abstract).
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