

## JEFFREY BEWS

### Personal

Jeffrey Bews  
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### Education

University of Manitoba (1985 to 1989)

- graduated with PhD. in Physics
- area of specialization: Medical Physics
- Thesis: "The Optical Properties Of Biological Tissue"

University of Manitoba (1981 to 1983)

- graduated with MSc. degree in Physics
- area of specialization: Solid State Physics
- Thesis: "Magnetoresistance of Dilute PtMn Alloys"

University of Winnipeg (1977 to 1981)

- graduated with BSc.(4 yr.) degree
- major: Physics

## Appointments

University of Manitoba, Department of Physics, Adjunct Professor (1990-present)

University of Manitoba, Department of Radiology, Assistant Professor (1992-present)

Health Sciences Center, Radiology, Scientific Staff (1989-present)

St. Boniface General Hospital, Radiology, Scientific Staff (1990-present)

## Awards

1994: Radiation Oncology Residents' Teaching Award

1994: MacBeth Travelling Fellowship from the Canadian Cancer Society

1990: American Association of Physicists in Medicine Summer School Scholarship

1987: Manitoba Health Research Council Studentship Award

1986: Natural Sciences and Engineering Research Council Award

1985: Natural Sciences and Engineering Research Council Award

1982: Natural Sciences and Engineering Research Council Award

1981: Natural Sciences and Engineering Research Council Award

1981: Natural Sciences and Engineering Research Council Summer Research Award

1981: Chancellor's Gold Medal for the highest standing in the 4 year science

program (University of Winnipeg)

1980: D.C. Hogg Scholarship in Physics

1980: The Winnipeg RH Institute Incorporated General Proficiency Scholarship

1979: The Winnipeg RH Institute Incorporated General Proficiency Scholarship

### Membership in Professional Societies

Canadian Organization of Medical Physicists

Canadian College of Physicists in Medicine

American Association of Physicist in Medicine

## Publications

- 1) "An Eight-Channel Detector for an Ir-192 Brachytherapy Source-Based CT Scanner"  
A.Berndt, S.Rathee, D.Rickey and J.Bews  
IEEE Transactions on Nuclear Science 47(3), p.1261 (2000)
- 2) "Size and Positioning Reproducibility of an Ir-192 Brachytherapy Stepping Source"  
A.Berndt, D.Rickey, S.Rathee and J.Bews  
Med.Phys. 27(1), p.129 (2000)
- 3) "High-Energy Electron and Photon Therapy to the Parotid Bed: Radiation Dose Perturbations with a Titanium Mandibular Implant"  
C.Mennard, J.Bews, R.Skoracki and A.Chowdhury  
Australasian Radiology 43, p.495 (1999)
- 4) "Regional Cerebral Blood Flow Measurements: A Comparative Study of Xenon-Enhanced CT and  $C^{15}O_2$  Build-up Using Dynamic PET"  
K. St.Lawrence, J. Bews, P. Dunscombe, T. Lee  
Phys. Med. Biol., 37, p.379 (1992)
- 5) "A Simplified Method for Measuring Cerebral Blood Flow With Xenon-Enhanced Computed Tomography"  
J. Bews, K. St.Lawrence, P. Dunscombe, B. McClarty, M. Kroeker  
Clin. Phys. Physiol. Meas., 12, p.279 (1991)
- 6) "Quantitative Computed Tomography of the Brain with Xenon Enhancement: A Phantom Study with the GE9800 Scanner"  
T. Lee, R. Ellis, P. Dunscombe, B. McClarty, D. Hodson, M. Kroeker, J. Bews  
Phys. Med. Biol. 35, p.925 (1990)
- 7) "The Role of Noise in the Measurement of Cerebral Blood Flow and Partition Coefficient Using Xenon Enhanced Computed Tomography"  
J. Bews, P. Dunscombe, T. Lee, B. McClarty, M. Kroeker  
Phys. Med. Biol. 35, p.937 (1990)
- 8) "Radiation Doses Due to Breast Imaging in Manitoba (1978-1988)"

W. Huda, A. Sourkes, J. Bews, R. Kowaluk  
Radiology 177, p.813 (1990).

- 9) "Population Irradiation Factors (PIF's) in Diagnostic Medical Dosimetry"  
W. Huda, J. Bews  
Health Physics 59(3), p.345 (1990)
- 10) "Doses and Population Irradiation Factors for Canadian  
Radiation Technologists (1978-1988)"  
W. Huda, J. Bews, K. Gordon, J. Sutherland, W. Sont, J. Ashmore  
Canadian Association of Radiologists Journal 42(4), p.247 (1991)
- 11) "Radiation Doses in Extracorporeal Shock Wave Lithotripsy"  
W.Huda, J.Bews, A.P.Saydak  
British Journal of Radiology 62, p.921 (1989)
- 12) "Occupational Doses in Radiation Oncology in Manitoba - 1980/1986"  
W.Huda, J.Bews, A.Sourkes  
Health Physics 57(4), p.521 (1989)
- 13) "Development of a Tissue Equivalent Phantom for Diaphanography "  
J.Linford, S.Shalev, J.Bews, R.Brown, H.Schipper  
Medical Physics 13, p.574 (1986)
- 14) "The Physical Basis of Diaphanography"  
S.Shalev, J.Linford, J.Bews, J.Arenson  
Brit. J. Radiology 58, p.826 (1985)
- 15) "Magnetoresistance of Some Dilute PtMn Alloys"  
J.Bews, A.W.Sheikh, G.Williams  
J. Phys. F: Met. Phys. 16, p.1537 (1986)

## Abstracts

- 1) S.Rathee, A.Berndt, D.Rickey, J.Bews, “An 8-channel Detector for an  $^{192}\text{Ir}$  Brachytherapy Source Based Computed Tomography Scanner”, Submitted for presentation at the 41<sup>st</sup> Annual Scientific Meeting of the American Society for Therapeutic Radiology and Oncology, San Antonio, TX, Oct. 31 – Nov. 4 (1999).
- 2) S.Miller, C.Jeffrey, J.Bews, A.Berndt, “Virtual Reality Assisted Brachytherapy”, Submitted for presentation at the 41<sup>st</sup> Annual Scientific Meeting of the American Society for Therapeutic Radiology and Oncology, San Antonio, TX, Oct. 31 – Nov. 4 (1999).
- 3) A.Berndt, S.Rathee, D.Rickey, J.Bews, “An 8-channel Detector for an  $^{192}\text{Ir}$  Brachytherapy Source Based Computed Tomography Scanner”, Accepted for presentation at the American Association of Physicists in Medicine Conference, Nashville, TN, July 25-29 (1999).
- 4) A.Berndt, S.Rathee, D.Rickey, J.Bews, “An 8-channel Detector for an  $^{192}\text{Ir}$  Brachytherapy Source Based Computed Tomography Scanner”, Presented at WESCAN, Kelowna BC, March 25-27 (1999).
- 5) A.Berndt, S.Miller, C.Jeffrey, J.Bews, “A Virtual Reality Assisted Brachytherapy Prototype”, Presented at WESCAN, Kelowna BC, March 25-27 (1999).
- 6) A.Berndt, J.Bews, C.Jeffrey, S.Miller, S.Rathee, D.Rickey, S.Pistorious, “Advances in Medical Physics”, Presented at the 13<sup>th</sup> Annual Community Cancer Programs Network Symposium, Winnipeg, October 22-24 (1998).
- 7) S.El-Sayed, J.Bews, S.Miller, A.Berndt, D.Christle, S.Pistorious, R.Nason, K.Jones. “Virtual Reality Brachytherapy: From Dream to Reality”, ESTRO (1998).

- 8) A.Berndt, J.Bews, S.Rathee, D.Rickey, "A High-Dose-Rate Brachytherapy Computed Tomography Scanner", Presented at the Canadian Organization of Medical Physicists Annual Meeting, London ON, June 29-21 (1998).
- 9) A.Berndt, S.Miller, J.Bews, D.Christle, S.Pistorious, "Virtual Reality Assisted Brachytherapy", Presented at the American Association of Physicists in Medicine Conference, San Antonio TX, August 9-13 (1998).
- 10) S.Miller, A.Berndt, J.Bews, B.McCurdy, W.Kinsner, "An Implementation of a Virtual Reality Interstitial Brachytherapy System", Presented at the Canadian Conference for Electrical and Computer Engineering, Waterloo, ON, May 23-27 (1998).
- 11) J.Bews and A.Berndt. "Virtual Reality Assisted Brachytherapy", Presented at the Canadian Organization of Medical Physicists Conference, Charlottetown PEI, July 10-12 (1998).
- 12) J. Bews and A. Berndt: 'Virtual Reality Assisted Brachytherapy', COMP Annual Meeting, Charlottown, P.E.I., Jun., 1997.
- 13) C.B. Kwok, R. Buist, D.N. Abrams and J.A. Bews: 'Quantitative Determination of Indicator Recirculation in Deuterium MRS Cerebral Blood Flow Studies in Rats', International Society for Magnetic Resonance in Medicine 4th Scientific Meeting and Exhibition, New York, New York, Apr. 27 - May 3, 1996.
- 14) C.B. Kwok, J.A. Bews, D.N. Abrams and R. Buist: 'Indicator Based Cerebral Blood Flow Measurements, Part I: Precision Determination Using Magnetic Resonance', WESCAN Physicists Conference 95, Victoria, BC, Mar. 23-25, 1995.
- 15) C.B. Kwok, J.A. Bews, D.N. Abrams and R. Buist: 'Indicator Based Cerebral Blood Flow Measurements, Part II: Dual-Indicator

Study Using Magnetic Resonance, WESCAN Physicists Conference 95, Victoria, BC, Mar. 23-25, 1995.

16) C.B. Kwok, J.A. Bews, D.N. Abrams and R. Buist: 'Indicator Based Cerebral Blood Flow Measurements, Part III: Indicator Recirculation Filtering Using Deconvolution and Magnetic Resonance', WESCAN Physicists Conference 95, Victoria, BC, Mar. 23-25, 1995.

17) J.A. Bews, C.B. Kwok, D.N. Abrams and R. Buist: 'The Measurement of Cerebral Blood Flow Using Deuterated Magnetic Resonance: Correcting for Recirculation and the Significance of Tracer Selection', COMP Annual Meeting, Montreal, PQ, Jun. 4-7, 1995.

18) C.B. Kwok, J. Bews, D. Abrams, R. Buist, R. Gordon: 'Simulated Blood Flow Measurements in a Water Phantom,' WESCAN Physicists Conference 94, Winnipeg, Manitoba, Mar. 3-5, 1994.

19) J. Bews, C.B. Kwok, D. Abrams, R. Buist, R. Gordon: 'Measurement of Cerebral Blood Flow Using Deuterium Magnetic Resonance Spectroscopy,' WESCAN Physicists Conference 94, Winnipeg, Manitoba Mar. 3-5, 1994.

20) J. Bews, C.B. Kwok, D. Abrams, R. Buist and R. Gordon: 'Investigating Tracer Based Perfusion a Water Phantom', AAPM Annual Meeting 94, Anaheim, CA, July 24-28, 1994. Abstract Published in Medical Physics, 21(6), 1994

- 21) C.B. Kwok, J.A. Bews, D. Abrams, R. Buist and R. Gordon:  
'Cerebral Blood Flow Measurement Using Intra-arterial Bolus  
Injection of  $^2\text{H}_2\text{O}$  with 7 T Magnetic Resonance Spectroscopy,'  
WESCAN Physicists Conference 93, Saskatoon, Canada, March  
18 - 20, 1993.
- 22) D.N. Abrams, J. Bews, C.B. Kwok, R. Buist and B. Gordon:  
'Measurement of cerebral blood flow using deuterium magnetic  
resonance', Prairie Provinces Chapter of the Society of Nuclear  
Medicine, 1993 Annual Meeting, Saskatoon, Saskatchewan, April  
1, 2 and 3, 1993.
- 23) J. Bews, D.N. Abrams, C.B. Kwok, R. Buist, B. Gordon:  
'Measurement of cerebral blood flow using deuterium magnetic  
resonance', AAPM 93 Annual Meeting, Washington, D.C.  
Abstract published in Medical Physics, 20(4), 1993.

## Employment

April 1988 to Present    Manitoba Cancer Treatment and Research Foundation

- position: Medical Physicist
- area of specialization: Radiotherapy Physics, Imaging Physics

Sept. 1983 to Sept. 1985    Manitoba Cancer Treatment and Research Foundation

- position: researcher
- research project: diaphanography, a breast cancer detection modality which is based on transillumination principles (visible and near infrared light)

Summer 1981    University of Winnipeg

- position: summer research student
- research project: nuclear magnetic resonance as applied to liquid crystals

Summer 1980, 1979 and 1978    Ward Laboratories

- position: summer student
- responsible for the chemical and biological analysis of water samples for environmental protection purposes