

# CURRICULUM VITAE

## PROFESSOR RICHARD GARTH BITTAR

### PERSONAL DETAILS

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#### *Postal Address*

Precision Neurosurgery

Lower Ground, 115 Cotham Rd

Kew, Victoria

Australia 3101

#### *Email*

ProfBittar@precisionhealth.com.au

#### *Telephone*

+61 3 8862 0000

#### *Date of Birth*

July 10, 1969

## **CAREER HISTORY**

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### *Current Appointments*

**Clinical Professor  
Deakin University  
Faculty of Health  
2012- present**

**Clinical Associate Professor  
The University of Sydney  
Sydney Medical School  
Brain and Mind Research Institute  
2009- present**

**Consultant Neurosurgeon  
Royal Melbourne Hospital  
Melbourne, Australia  
2007- present**

**Consultant Neurosurgeon  
St Vincent's Private Hospital  
Sydney, Australia  
2009- present**

### *Previous Appointments*

**2004-2009  
Consultant Neurosurgeon  
The Alfred Hospital  
Melbourne, Australia**

**2005-2010  
Consultant Neurosurgeon  
Peninsula Health  
Victoria, Australia**

**2003-2004  
Neurosurgery Fellow  
Functional and Stereotactic Neurosurgery  
Complex Spinal Surgery  
Radcliffe Infirmary, Oxford  
Oxford University**

**2002-2003  
Neurosurgery Registrar  
Austin and Repatriation Medical Centre  
Victoria**

**2000-2001  
Neurosurgery Registrar  
Westmead Hospital  
New South Wales**

***1999***

**Neurosurgery Registrar  
St Vincent's Hospital, Victoria  
Royal Childrens Hospital, Victoria**

***1998***

**Neurosurgery Registrar  
Western Hospital, Victoria**

***1996-2000***

**PhD Candidate  
University of Sydney, New South Wales**

**Montreal Neurological Institute and Hospital  
Quebec, Canada**

**Resident Medical Officer (1996)  
Royal Prince Alfred Hospital, New South Wales**

***1995***

**Resident Medical Officer  
Westmead Hospital, New South Wales**

***1994***

**Intern  
Westmead Hospital, New South Wales**

## **TERTIARY EDUCATION**

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**The University of Sydney**

Bachelor of Medicine and Bachelor of Surgery (Honours), 1994

Doctor of Philosophy, 2001

## **SECONDARY EDUCATION**

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**Blue Mountains Grammar School (Wentworth Falls, NSW, Australia)**

Higher School Certificate, 1987  
Tertiary Entrance Score in Highest 1%  
Richard Pomeroy Prize for Dux

## **POSTGRADUATE QUALIFICATIONS**

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**Royal Australasian College of Surgeons Part I Examination (1996)**

**Early Management of Severe Trauma (EMST) Certificate (1997)**

**Doctor of Philosophy, The University of Sydney (2001)**  
Functional Brain Mapping in Neurosurgery

**Royal Australasian College of Surgeons Part II Examination (2003)**  
Neurological Surgery

**Fellow, Royal Australasian College of Surgeons (2004)**  
Neurological Surgery

## **ACADEMIC APPOINTMENTS**

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**Clinical Associate Professor, The University of Sydney, Sydney Medical School,  
Brain and Mind Research Institute (2009)**

**Senior Lecturer, Department of Surgery, University of Melbourne (2008)**

**Senior Lecturer, Department of Surgery, Monash University (2004)**

**Clinical Lecturer, Department of Surgery, University of Sydney (2001)**

**Fellow, Department of Medicine, University of Melbourne (2001)**

## **AWARDS AND SCHOLARSHIPS**

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**University of Sydney Faculty of Medicine Postgraduate Research Scholarship (1997)**

**Thomas and Ethel Mary Ewing Travelling Fellowship (University of Sydney) (1998,  
1999, 2001)**

**Royal Australasian College of Surgeons, Hugh Johnson Traveling Fellowship (2003)**

**Joan and Richard Doll Fellowship, Green College, Oxford University (2004)**

**Stereotactic and Functional Neurosurgery Award, Congress of Neurological  
Surgeons 54<sup>th</sup> Annual Meeting (2004)**

**Distinguished Lecturer, Royal Australasian College of Surgeons, Conjoint Annual Scientific Congress (2008)**

**Distinguished Lecturer, Royal Australasian College of Surgeons, Annual Scientific Congress (2010)**

#### **MEMBERSHIP OF PROFESSIONAL ORGANISATIONS**

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**Australian Medical Association**

**Neurosurgical Society of Australasia**

**Congress of Neurological Surgeons**

**American Society for Stereotactic and Functional Neurosurgery**

**European Society for Stereotactic and Functional Neurosurgery**

**World Society for Stereotactic and Functional Neurosurgery**

**International Association for the Study of Pain**

**Australian Pain Society**

**International Neuromodulation Society**

#### **PREVIOUS COMMITTEE MEMBERSHIPS**

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**Southern Melbourne Integrated Cancer Service-  
Central Nervous System Tumour Group**

**Royal Australasian College of Surgeons  
Victorian Trauma Committee**

**Royal Australasian College of Surgeons-  
Victorian Road Trauma Committee**

**Children's Hospital of Uganda Epilepsy Surgery Project-  
Safety and Advisory Committee**

**Cancer Council of Victoria-  
Victorian Co-operative Oncology Group: Neuro-oncology**

**Knox Private Hospital  
Medical Advisory Committee**

**Frankston Private Day Surgery  
Medical Advisory Committee**

**Austofix Pty Ltd  
Scientific Advisory Committee**

## **CLINICAL INTERESTS AND EXPERTISE**

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### **General Neurosurgery**

#### **Surgical Neuro-oncology**

Intracranial tumours  
Tumours of the vertebral column and spinal cord

#### **Neuromodulation**

Movement disorders  
Pain  
Psychosurgery

#### **Complex Spinal Surgery**

Degenerative spinal disorders  
Spinal trauma

## **RESEARCH GRANTS**

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### **National Health and Medical Research Council**

Project Grant, 2009

Principal Investigator

Value \$500,000

Investigation of the relative efficacy of globus pallidus internus and subthalamic nucleus deep brain stimulation in Parkinson's disease patients over 70 years of age.

## **PUBLICATIONS AND ABSTRACTS**

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### ***Publications***

1. Bittar RG, Andermann F, Olivier A, Dubeau F, Dumoulin S, Pike GB, Reutens DC. Interictal spikes increase cerebral glucose metabolism and blood flow: A PET study. *Epilepsia* 40:170-178, 1999

2. FitzGibbon T, Bittar RG, Dreher B. Projections from striate and extrastriate visual cortices of the cat to the reticular thalamic nucleus. *Journal of Comparative Neurology* 410:467-488, 1999
3. Bittar RG, Olivier A, Sadikot A, Andermann F, Comeau RM, Cyr M, Peters TM, Reutens DC. Localization of somatosensory function with PET: A comparison with intraoperative cortical stimulation. *Journal of Neurosurgery* 90:478-483, 1999
4. Reutens DC, Bittar RG. Functional positron emission tomography. *Journal of Neurosurgery* 91:166-167, 1999
5. Bittar RG, Olivier A, Sadikot AF, Andermann F, Pike GB, Reutens DC. Presurgical motor and somatosensory cortex mapping with functional magnetic resonance imaging and positron emission tomography. *Journal of Neurosurgery* 91:915-921, 1999
6. Bittar RG, Ptito M, Faubert J, Dumoulin SO, Ptito A. Activation of the remaining hemisphere following stimulation of the blind hemifield in hemispherectomized subjects. *Neuroimage* 10:339-346, 1999
7. Boling W, Olivier A, Bittar RG, Reutens D. Motor hand activation is localized in Broca's pli de passage moyen. *Journal of Neurosurgery* 91:903-910, 1999
8. Bittar RG, Ptito A, Dumoulin SO, Andermann F, Reutens DC. Anatomical reorganisation of the visual cortex in callosal agenesis and colpocephaly. *Journal of Clinical Neuroscience* 7:13-15, 2000
9. Bittar RG, Ptito A, Reutens DC. Somatosensory representation in patients who have undergone hemispherectomy: a functional magnetic resonance imaging study. *Journal of Neurosurgery* 92:45-51, 2000
10. Dumoulin SO, Bittar RG, Kabani NJ, Baker CL Jr, Le Goualher G, Pike GB, Evans AC. Quantification of the variability of human area V5/MT in relation to the sulcal pattern in the parieto-temporo-occipital cortex: A new anatomical landmark. *Cerebral Cortex* 10:454-463, 2000
11. Bittar RG, Olivier A, Sadikot AF, Andermann F, Reutens DC. Cortical motor and somatosensory representation: effect of cerebral lesions. *Journal of Neurosurgery* 92:242-248, 2000
12. Reutens DC, Tochon-Danguy H, Bittar RG. Clinical Applications of [<sup>15</sup>O]H<sub>2</sub>O PET activation studies. *Clinical Positron Imaging* 2:145-152, 1999
13. Drummond KJ, Bittar RG, Fearnside MR. Metastatic atypical meningioma: Case report and review of the literature. *Journal of Clinical Neuroscience* 7:69-72, 2000
14. Bittar RG, Rosenfeld JV, Klug GL, Hopkins IJ, Harvey AS. Resective Surgery in Infants and Young Children with Intractable Epilepsy. *Journal of Clinical Neuroscience* 9:142-146, 2002
15. Olausson H, Marchand S, Bittar RG, Bernier J, Ptito A, Bushnell MC. Central pain in a hemispherectomized patient. *The European Journal of Pain* 5:209-217, 2001

16. Mah E, Bittar RG, Davis GA. Cerebral Metastases in Malignant Mesothelioma: Case Report and Literature Review *Journal of Clinical Neuroscience* 11:917-918, 2004
17. Bittar RG, Fabinyi GC. Driving Guidelines and Neurological Illness: A Review. *Journal of Clinical Neuroscience* 11:455, 2004
18. Bittar RG. Virtual Lesions: Examining Cortical Function with Reversible Deactivation. *Journal of Clinical Neuroscience* 11:219, 2004
19. Bittar RG, Yianni J, Wang SY, Liu X, Nandi D, Joint C, Scott R, Bain PG, Gregory R, Stein J, Aziz TZ. Deep Brain Stimulation for Generalised Dystonia and Spasmodic Torticollis. *Journal of Clinical Neuroscience* 12:12-16, 2005
20. Bittar RG, Nandi D, Carter H, Aziz TZ. Somatotopic Organisation of the Human Periventricular Gray Matter. *Journal of Clinical Neuroscience* 12:240-241, 2005
21. Bittar RG, Hyam J, Nandi D, Wang SY, Liu X, Joint C, Bain PG, Gregory R, Stein J, Aziz TZ. Thalamotomy versus Thalamic Stimulation for Multiple Sclerosis Tremor. *Journal of Clinical Neuroscience* 12:638-642, 2005
22. Bittar RG, Otero S, Carter H, Aziz TZ. Deep Brain Stimulation for Phantom Limb Pain. *Journal of Clinical Neuroscience* 12:399-404, 2005
23. Bittar RG, Burn SC, Bain PG, Owen SL, Joint C, Wilson J, Shlugman D, Aziz TZ. Operative Technique: Deep Brain Stimulation for Movement Disorders and Pain. *Journal of Clinical Neuroscience* 12:457-463, 2005
24. Bittar RG, Kar-Purkayastha I, Owen SL, Bear RE, Green A, Wang SY, Aziz TZ. Deep brain stimulation for pain relief: a meta-analysis. *Journal of Clinical Neuroscience* 12:515-519, 2005
25. Sillery E, Bittar RG, Robson MD, Behrens TEJ, Stein J, Johansen-Berg H. Connectivity of the Human Periventricular and Periaqueductal Gray. *Journal of Neurosurgery* 103:1030-1034, 2005
26. Yianni J, Green AL, McIntosh E, Bittar RG, Joint C, Scott R, Gregory R, Bain PG, Aziz TZ. The costs and benefits of deep brain stimulation surgery for patients with dystonia. *Neuromodulation* 8:155-161, 2005
27. Bittar RG, Yianni J, Wang S, Liu X, Nandi D, Joint C, Scott R, Bain PG, Gregory R, Stein J, Aziz TZ. Stereotactic and Functional Neurosurgery Resident Award: deep brain stimulation for generalized dystonia and spasmodic torticollis: rate and extent of postoperative improvement. *Clinical Neurosurgery*. 52:379-83, 2005.
28. Chan CHP, Bittar RG, Davis GA, Kalnins RM, Fabinyi GCA. Long-term Seizure Outcome Following Surgery for Dysembryoplastic Neuroepithelial Tumours (DNETs). *Journal of Neurosurgery* 104:62-69, 2006

29. Bittar RG. Neuromodulation for Movement Disorders *Journal of Clinical Neuroscience* 13:315-318, 2006
30. Owen SLF, Green AL, Nandi D, Bittar RG, Wang SY, Aziz TZ. Deep Brain Stimulation for Neuropathic Pain. *Neuromodulation* 9:100-106, 2006
31. Khurana VG, Teo C, Bittar RG. Health Risks of Cell Phone Technology. *Surgical Neurology* 72: 436-437, 2009
32. Green AL, Bittar RG, Bain P, Scott RB, Joint C, Gregory R, Aziz TZ. STN versus Pallidal Stimulation in Parkinson's Disease: Improvement with experience and better patient selection. *Neuromodulation* 9:21-27, 2006
33. Bittar RG. BMP-7 (OP-1®) safety in anterior cervical fusion surgery. *Injury* 37:S3-S4, 2006
34. Green AL, Wang S, Owen SLF, Xie K, Bittar RG, Stein JF, Paterson DJ, Aziz TZ. Stimulating the human midbrain to reveal the link between pain and blood pressure. *Pain* 124:349-359, 2006
35. Green AL, Wang S, Bittar RG, Owen SLF, Paterson DJ, Stein JF, Bain PG, Shlugman D, Aziz TZ. Deep Brain Stimulation: A New Treatment for Hypertension? *Journal of Clinical Neuroscience* 14:592-595, 2007
36. Gordon MV, Varma D, McLean CA, Bittar RG, Burgess JR, Topliss DJ. Metastatic prolactinoma presenting as a cervical spinal cord tumour in multiple endocrine neoplasia type one (MEN-1). *Clinical Endocrinology* 66:150-152, 2007
37. Owen SL, Green AL, Nandi DD, Bittar RG, Wang S, Aziz TZ. Deep brain stimulation for neuropathic pain. *Acta Neurochir Suppl.* 97(Pt 2):111-116, 2007
38. Boling W, Palade A, Wabulya A, Longoni N, Warf B, Nestor S, Alpitsis R, Bittar R, Howard, C, Andermann F. Surgery for Pharmacoresistant Epilepsy in the Developing World: A Pilot Study. *Epilepsia* 50:1256-1261, 2009
39. Silberstein P, Bittar RG, Boyle R, Cook R, Coyne T, O'Sullivan D, Pell M, Peppard R, Rodrigues J, Silburn P, Stell R, Watson P. Deep Brain Stimulation for Parkinson's Disease: Australian Referral Guidelines. *Journal of Clinical Neuroscience* 16:1001-1008, 2009
40. Bittar RG, Teddy PJ. Peripheral Neuromodulation for Pain. *Journal of Clinical Neuroscience* 16: 1259-1261, 2009
41. Teddy PJ, Bittar RG. Peripheral Neuromodulation for Pain. *Journal of Clinical Neuroscience* 16:1257-1258, 2009
41. Leach J, Bittar RG. BMP-7 (OP-1®) Safety in Anterior Cervical Fusion Surgery. *Journal of Clinical Neuroscience* 16: 1417-1420, 2009

42. Bittar RG. Comment on "Typical variations of subthalamic electrode location do not predict limb motor function improvement in Parkinson's disease". *Journal of Clinical Neuroscience* 16:779, 2009

43. Bear RE, Fitzgerald P, Rosenfeld JV, Bittar RG. Neurosurgery for Obsessive-Compulsive Disorder: Contemporary Approaches. *Journal of Clinical Neuroscience* 17: 1-5, 2010

44. Perkins T, Stokes M, McGillivray J, Bittar R. Mirror Neuron Dysfunction in Autism Spectrum Disorders. *Journal of Clinical Neuroscience* 17: 1239-1243, 2010

45. Fitzgerald PB, Segrave R, Hoy K, Herring S, Daskalakis ZJ, Bittar RG. Intra-operative and Early Post-operative Stimulation Responses to Deep Brain Stimulation in Treatment-Resistant Major Depression (Submitted)

### ***Book Chapters***

Reutens DC, Bittar RG. *Multimodality Imaging*. In: Lüders HO, Comair YG. *Epilepsy Surgery (2<sup>nd</sup> edition)*. Lippincott Williams and Wilkins, Philadelphia, 2001

Bittar RG. *Agenesis of the Corpus Callosum*. In: *The NORD Guide to Rare Disorders*. Lippincott Williams and Wilkins, Philadelphia, 2003

Bittar RG, Yianni J, Wang SY, Liu X, Bain P, Nandi D, Joint C, Stein J, Aziz TZ. *Deep brain stimulation for generalised dystonia and spasmodic torticollis: An examination of the rate and extent of improvement*. In: *Clinical Neurosurgery*, Volume 50, Chapter 50, Lippincott Williams & Wilkins, 2005

Bittar RG. *Neurosurgical Management of Headaches*. In: Selveratnam, Friedman, Niere, Zuluaga, Oddy. *Headaches, Bruxism and Related Conditions: Diagnosis and Multidisciplinary Approaches to Management*. Elsevier, Edinburgh, 2009

### ***Conference Abstracts***

1. Bittar RG, FitzGibbon T, Dreher B. Does the cortex talk with one or many voices to the gatekeeper? Cortical visuotopic map in the cat's thalamic reticular nucleus. *Australian Neuroscience Society Annual Meeting*, 1997

2. Bittar RG, Donlon D, Pharoah M, Houang M, Dan NG. The 'gin' of King Charlie: An Aboriginal skull from south-eastern Australia. *Canadian Association for Physical Anthropology Annual Meeting*, 1997

3. Reutens DC, Lee J, Bittar R, Andermann F, Peters T, Olivier A. Functional mapping with PET: Role in resection of central epileptic foci. *American Epilepsy Association Annual Meeting*, 1997

4. Bittar RG, Olivier A, Andermann F, Reutens DC. Cortical plasticity in lesions of the central region. *American Association of Neurological Surgeons Annual Meeting*, Poster Program; p234; 1998

5. Bittar RG, Olivier A, Sadikot A, Andermann F, Reutens DC. False negatives with intraoperative cortical stimulation: Elucidation with PET and fMRI. *Neurology* 50 (S4): A193, 1998
6. Bittar RG, Olivier A, Sadikot A, Ptito A, Reutens DC. Plasticity of the human motor and somatosensory cortex: A positron emission tomography (PET) study. *Australia and New Zealand Journal of Surgery* 68 (Suppl.): A101, 1998
7. Bittar RG, Olivier A, Sadikot A, Reutens DC. Presurgical localisation of primary motor and somatosensory cortex with PET and fMRI. *Australia and New Zealand Journal of Surgery* 68 (Suppl.): A105; 1998
8. Bittar RG, Ptito A, Faubert J, Pike GB, Evans AC. Investigation of the anatomical basis of blindsight: An fMRI study of hemispherectomized subjects. *International Conference on Functional Mapping of the Human Brain*, 1998
9. Bittar RG, Ptito A, Dumoulin SO, Andermann F, Reutens DC. Demonstration of large-scale reorganization of the visual cortex with functional magnetic resonance imaging (fMRI). *International Conference on Functional Mapping of the Human Brain*, 1998
10. Dumoulin SO, Bittar RG, Kabani NJ, Baker Jr. CL, Le Goualher G, Pike GB, Evans AC. Quantification of the variability of human area V5/MT in relation to the sulcal pattern in the parieto-temporo-occipital cortex: A new anatomical landmark. *International Conference on Functional Mapping of the Human Brain*, 1998
11. Bittar RG, Olivier A, Sadikot A, Andermann A, Pike GB, Reutens DC. Is intraoperative cortical stimulation (ICS) of the primary motor cortex a 'gold standard'? *International Conference on Functional Mapping of the Human Brain*, 1998
12. Bittar RG, Olivier A, Sadikot A, Andermann A, Pike GB, Reutens DC. Presurgical planning with fMRI: Cross-validation with PET. *International Conference on Functional Mapping of the Human Brain*, 1998
13. Bittar RG, Dumoulin SO, Ptito A, PikeGB, Evans AC. Cortical areas activated by visual motion revealed by functional magnetic resonance imaging. *International Conference on Functional Mapping of the Human Brain*, 1998
14. Bittar RG, Ptito A, Reutens DC. Somatosensory reorganization in hemispherectomised humans: A functional MRI study. *Neurosurgical Society of Australasia Annual Scientific Meeting*, 1998
15. Bittar RG, Olivier A, Sadikot AF, Reutens DC. Presurgical motor and somatosensory cortex mapping with fMRI and PET. *Congress of Neurological Surgeons Annual Meeting*, 1999
16. Bittar RG, Rosenfeld JV, Klug GL, Hopkins IJ, Harvey AS. Resective surgery in infants and young children with intractable epilepsy. *Royal Australasian College of Surgeons Annual Scientific Congress*, 2001
17. Bittar RG, Dumoulin SO, Kabani NJ, Le Goualher G. A new anatomical landmark for reliable identification of human area V5 (visuomotor cortex): a quantitative analysis of

sulcal patterning. *Royal Australasian College of Surgeons Annual Scientific Congress, 2001*

18. Bittar RG, Aziz TZ, Yianni J, Stein J, Wang SY, Liu X, Nandi D, Joint C, Gregory R, Bain PG, Scott RB. Rate of Improvement Following Deep Brain Stimulation for Generalized Dystonia and Spasmodic Torticollis. *Movement Disorder Society Annual Scientific Congress, 2004*

20. Bittar RG, Aziz TZ, Yianni J, Stein J, Wang SY, Liu X. DBS for Dystonia: How Quickly do Patients Respond? *European Society for Stereotactic and Functional Neurosurgery Annual Scientific Congress, 2004*

21. Bittar RG, Yianni J, Wang SY, Liu X, Nandi D, Joint C, Scott RB, Bain PG, Gregory R, Stein J, Aziz TA. Deep Brain Stimulation for Generalized Dystonia and Spasmodic Torticollis. *Congress of Neurological Surgeons Annual Meeting, 2004*

22. Bittar RG, Kar-Purkayastha I, Owen SL, Bear RE, Green A, Wang S, Aziz TZ. Deep Brain Stimulation for Pain Relief: A Meta-analysis. *American Association of Neurological Surgeons Annual Meeting, 2005*

23. Bittar RG, Nandi D, Aziz T, Sillery E, Johansen-Berg H, Kar-Purkayastha I. Human Periventricular Gray: Anatomical and Clinical Aspects. *Neurosurgical Society of Australasia Annual Scientific Meeting, 2005*

24. Hyam JA, Bittar RG, Aziz TZ. Efficacy at the Expense of Safety: Thalamotomy versus Thalamic Stimulation for Multiple Sclerosis Tremor. *Congress of Neurological Surgeons Annual Meeting, 2005*

25. Pereira EAC, Green AL, Owen SLF, Moir L, Wang S, Grover PJ, Canty MJ, De Pennington N, Bittar RG, Nandi D, Aziz TZ. Deep Brain Stimulation for Pain: Increasing Efficacy in 55 Patients. *Congress of Neurological Surgeons Annual Meeting, 2007*

26. Bittar RG, Leach J. BMP-7 (OP-1®) Safety in Anterior Cervical Fusion Surgery. *Spine Society of Australia Annual Scientific Congress, 2009*

27. Williams DR, Bittar R. Pedunculopontine Nucleus Stimulation in Pure Akinesia with Gait Freezing. *13<sup>th</sup> International Congress of Parkinson's Disease and Movement Disorders, 2009*

28. Leach JCD, Bittar RG. Safety of BMP-7 in Anterior Cervical Fusion Surgery. *British Association of Spinal Surgeons/British Cervical Spine Society, 2009*. *Journal of Bone and Joint Surgery - British Volume, Vol 92-B, Issue SUPP\_III, 382, 2010*.

29. Bittar RG. Deep brain stimulation for depression, OCD, Tourette's, and epilepsy-emerging indications. *Neurosurgical Society of Australasia Annual Scientific Congress, 2011*

### ***Invited Lectures***

1. Deep Brain Stimulation for Dystonia. Medtronic Annual Meeting, Geneva, Switzerland. December 2003.
2. Surgical Management of Generalised Dystonia and Spasmodic Torticollis. Dystonia and Spasticity Symposium, Hull Royal Infirmary. Hull, United Kingdom. January 2004.
3. Deep Brain Stimulation for Spasmodic Torticollis and Generalised Dystonia. Dystonia Ireland Annual Symposium. Dublin, Ireland. February 2004.
4. Peripheral Nerve Stimulation. Nerve Root and Peripheral Nerve Stimulation for Intractable Pain- Peer to Peer Workshop. Department of Anatomy, Monash University. April 2005.
5. Update on Surgical Options for Parkinson's Disease. 5<sup>th</sup> International Symposium of the Asian and Pacific Parkinson's Disease Associations. Melbourne, Australia. October 2005.
6. Surgical Management of Parkinson's Disease. 5<sup>th</sup> International Symposium of the Asian and Pacific Parkinson's Disease Association. Melbourne, Australia. October 2005.
7. Management of Thoracolumbar Fractures. Royal Australasian College of Surgeons Neurosurgery Trainee's Seminar. Melbourne, Australia. November, 2005.
8. Ski Helmets and Head Injury Prevention. Victorian Ski Clinics Snow Sports Injury Forum. Lindenwarrah, Australia. December 2005.
9. Head Injuries: A Practical Update. Victorian Ski Clinics Snow Sports Injury Forum. Lindenwarrah, Australia. December 2005.
10. Cervical Spine Trauma. Victorian Ski Clinics Snow Sports Injury Forum. Lindenwarrah, Australia. December 2005.
11. Plenary Lecture: Deep Brain Stimulation for Pain. 26<sup>th</sup> Annual Scientific Meeting of the Australian Pain Society. Melbourne, Australia. April 2006.
12. Deep Brain Stimulation for Movement Disorders and Psychiatric Illness. Scientific Meeting of the International Neuromodulation Society Australian Chapter. Melbourne, Australia. April 2006.
13. Safety of Bone Morphogenetic Proteins in Anterior Cervical Discectomy and Fusion. 7<sup>th</sup> Annual Stryker Spine Symposium. Byron Bay, Australia. May 2006.
14. Neuromodulation for Movement Disorders. Neuromodulation Workshop: Basic Research and Clinical Practice. Capital University of Medical Sciences, Beijing, China. June 2006.
15. BMP-7 (OP-1) Safety in Anterior Cervical Fusion Surgery. 3<sup>rd</sup> European Clinical Symposium on Bone Healing and Tissue Regeneration. Florence, Italy. September 2006.

16. Neuromodulation for Pain. Neurosurgical Society of Australasia Annual Scientific Meeting. Cairns, Australia. September 2006.
17. Thalamus and Periventricular Gray: Targets in Pain Surgery. Royal Australasian College of Surgeons Neurosurgery Trainee's Seminar. Canberra, Australia. October 2006.
18. Neuromodulation for Pain: Contemporary Approaches. Royal Australia and New Zealand College of Anaesthetists Faculty of Pain Medicine Seminar. Melbourne, Australia. October 2006.
19. Diagnosis, Investigation and Management of Acute Paralysis. Faculty of Medicine, Monash University. Lecture to Medical Students. Melbourne, Australia. June 2006, October 2007.
20. Cervical Spine Surgery. AMA Section of Medicolegal Practice Meeting. Melbourne, Australia. May 2006.
21. Surgery for Pain. Australia and New Zealand College of Anaesthetists Annual Scientific Congress. Melbourne, May 2007.
22. Keynote Lecture: Deep Brain Stimulation and Motor Cortex Stimulation. Royal Australasian College of Surgeons. Conjoint Annual Scientific Congress. Hong Kong, May 2008.
23. Peripheral Nerve Stimulation and Regional Field Stimulation for Pain. Royal Australasian College of Surgeons. Conjoint Annual Scientific Congress. Hong Kong, May 2008.
24. Spinal Cord Stimulation for Failed Back Surgery Syndrome. Royal Australasian College of Surgeons. Conjoint Annual Scientific Congress. Hong Kong, May 2008.
25. Deep Brain Stimulation: Mechanisms of Action. Medical Bionics 2008. Lorne, Australia. November 2008.
26. Surgery for Metastatic Spinal Cord Compression. Clinical Oncological Society of Australia. Annual Scientific Congress. Gold Coast, November 2009.
27. Keynote Lecture: Deep Brain Stimulation for Movement Disorders and Pain. Royal Australasian College of Surgeons. Annual Scientific Congress. Perth, May 2010.