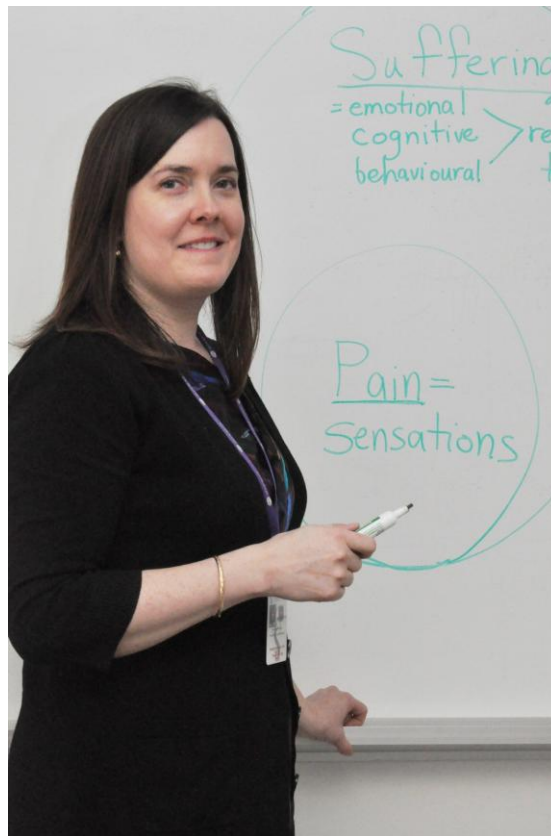




**WESTERN UNIVERSITY**  
**INTERDISCIPLINARY PAIN PROGRAM**

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ANNUAL REPORT

2011



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**- EXECUTIVE SUMMARY -**

**Pain Program Annual Report 2011**

One of the successes of the Western Interdisciplinary Pain Program has been the initiation of Earl Russell Trainee Grants for training in the Faculties of Medicine & Dentistry, Health Sciences and Social Sciences. Competitive mini-grants of up to \$10,000 are available annually to provide seed funding for pain research projects for trainees who are sponsored by a faculty member at Western. Since 2008, \$43,000 has been distributed for grants in pain research. In 2011, Dr. Raj Manikandan, Pain Fellow, sponsored by Drs. Geoff Bellingham and Pat Morley-Forster in the Department of Anesthesiology & Perioperative Medicine, designed and implemented a study of plasma concentrations of ketamine and norketamine in patients using topical 10% ketamine gel for neuropathic pain. This study was awarded an Earl Russell Trainee Grant of \$7,850 and will be presented at the annual Canadian Anesthesiology Society meeting in June of next year.

For the past several years, our strategic plan for research has focused on the management of neuropathic pain. However, recent peer-reviewed funding to investigate functional MRI of the brain in fibromyalgia and complex regional pain syndrome has allowed us to broaden our mandate to study the mechanisms of generation of chronic pain in these conditions. We look forward to further collaboration with our colleagues in brain imaging at Lawson Health Research Institute to complete this work.

Further exciting developments occurred in 2011 regarding implementation of Pain Medicine as a subspecialty of the Royal College of Physicians & Surgeons of Canada. This program, chaired by Dr. Pat Morley-Forster, has now been accredited by the Royal College and this 2-year fellowship in Pain Medicine is scheduled to start at academic centres across the country in July 2014. This will standardize pain education in Canada at a high level for generations to come.



Dwight Moulin, M.D., FRCP(C), Earl Russell Chair, U.W.O. Pain Program

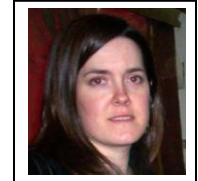
**Face Page**

Psychologist, Dr. Heather Getty, instructs a group of patients in psychological techniques to relieve chronic pain

**- SCIENTIFIC ADVISORY BOARD MEMBERS -**



**Dr. Geoff Bellingham** completed residency in anesthesia and perioperative medicine at the University of Western Ontario. This was followed by a fellowship Bellingham's focus during the fellowship was on the use of ultrasound guidance for interventional pain management in addition to other established interventional pain management techniques using fluoroscopy. Currently, he holds pain clinics in which patients are managed using pharmacotherapy in addition to using other resources available such as psychotherapy and physiotherapy. Interventions using ultrasound are integrated into these clinics and separate interventional days using fluoroscopy are held within the St. Joseph's Imaging Department.



**Heather Getty** earned her Ph.D. in Adult Clinical Psychology at the University of Windsor. Her training including her Pre-doctoral Residency at the London Health Sciences Centre has involved work in both traditional mental health treatment settings and in clinical health psychology programs for the treatment of chronic sleep and pain disorders. She was Postdoctoral Fellow in the Pain/Anxiety program at St. Joseph's Health Care 2002-2005 where she researched psychosocial predictors of disability among individuals with chronic pain. She conducts treatment, research and education at the St. Joseph's Health Care Pain Management Program.



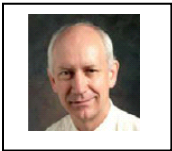
**Gloria Gilbert** attained a BSc (pt) degree from McGill University and a MSc from the University of Western Ontario. She is secretary and newsletter editor of the Canadian Academy of Pain Management (CAPM)([www.canadianapm.com](http://www.canadianapm.com)) and is credentialed as a Fellow of both the Canadian and American Academies.

Experience in treating/managing patients with delayed recovery after traumatic neck injuries has led to clinical research on mild traumatic brain injury and post-trauma vision syndrome. Gloria is an active member of NORA (The Neuro-Optometric Rehabilitation Association ([www.nora.cc](http://www.nora.cc))) and the Pain Sciences Division of the Canadian Physiotherapy Association (CPA). Throughout her career, Gloria has been a mentor to her physiotherapy colleagues in the area of chronic pain management. She will be presenting at several physiotherapy conferences as well as the Canadian Pain Society in 2012.

She was recently honoured with a Life Member Award through CPA.



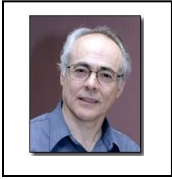
**Dr. Patricia Morley-Forster** is a Professor of Anesthesiology at the University of Western Ontario (effective July 1, 2012). In February 2002, she was appointed as the inaugural Earl Russell Chair of Pain Research and Medical Director of the Comprehensive Pain Clinic at St. Joseph's Health Care, London. Past research in the area of pain has been on the use of non-steroidal anti-inflammatory medication for postoperative pain relief and PCA opioids in labour analgesia. From 1990-2000, she was the Director of Obstetric Anesthesia at the University of Western Ontario before undertaking fellowship training in cancer pain management and chronic pain at the Wasser Clinic in Toronto. She is keenly interested in education in Pain Management and is the Chair of the Royal College Working Group in Pain Medicine, a committee mandated to develop a two-year accredited residency in Pain Medicine. Current research and clinical interests are neuropathic pain, acute pain management in chronic pain patients and topical analgesics.



**Dr. Dwight Moulin** is a Professor in the Departments of Clinical Neurological Sciences and Oncology and the Earl Russell Chair of the Pain Program at the University of Western Ontario. He is also the Medical Director of Pain and Symptom Management at the London Regional Cancer Program in London, Ontario. His research interests include randomized controlled trials to determine the role of opioid analgesics in the management of chronic pain and observational studies to assess the impact of chronic pain in a variety of chronic neurological disorders. Current research projects include the role of intravenous lidocaine in the treatment of chronic pain and long term outcome of the management of neuropathic pain. Dr. Moulin was the lead author of national consensus guidelines for the management of neuropathic pain in Canada.



**Dr. Warren Nielson** is an Adjunct Professor of Psychology at the University of Western Ontario. He is also the Clinical Director of the Rheumatology Day Programs at St. Joseph's Health Care, London. His research interests are in psychological factors associated with chronic pain, particularly in relation to Rheumatoid Arthritis, Osteoarthritis and Fibromyalgia Syndrome. He is also a member of the Canadian Scleroderma Research Group and on the Editorial Board of the Journal of Pain. Current studies focus on factors that influence outcomes of multidisciplinary treatment programs and motivational factors in pain self-management. Dr. Nielson is a Fellow of the Canadian Psychological Association.



**Dr. Frank Prato** is a Professor in the Departments of Medical Imaging, Medical Biophysics and Physics at the University of Western Ontario and Imaging Program Leader and Assistant Scientific Director, Lawson Health Research Institute. His research interests are primarily in the area of imaging of brain function, both magnetic resonance imaging and nuclear medicine and how it is disturbed in cortical and vascular disease processes. He has also studied the mechanisms by which magnetic fields alter expression of opioid-induced analgesia. Animal and human studies have shown that combinations of magnetic fields can elicit analgesia equivalent to a modest dose of morphine. His goal is the development of image-guided magnetic field therapy for the treatment of pain.



**Dr. Alex Thomas** is the Bioelectromagnetics Scientist and CIHR University-Industry Chair and leader of the Human Threshold Testing Facility at the Lawson Research Institute, St. Joseph's Health Care (London) and an Associate Professor in the Departments of Medical Biophysics and Medical Imaging, Schulich School of Medicine and Dentistry (UWO) and President of Planetary Village ([www.planetaryvillage.org](http://www.planetaryvillage.org)). Dr. Thomas is a multidisciplinary researcher and professor with degrees in Medical Biophysics, Neuroscience, Psychology, Geotechniques and Geology. He has had an extensive career in industry and academia and has formed spin-off corporations and invented and patented methods, devices and technologies. Dr. Thomas' interests are clearly in the development of new technologies related to magnetic field safety, diagnosis and therapy and the discovery of new treatments and hybrid functional imaging modalities and understanding neuromodulation mechanisms. His group has recently pioneered the development of multi-modality hybrid imaging with simultaneous fMRI/EEG/EMG acquisition during the imaging of acute thermal pain and other stimuli during pulsed magnetic field exposure and other magnetic field exposure conditions.

**- MISSION -**

- To provide exemplary clinical care in prevention and treatment of debilitating pain states
- To continually improve pain management through research and education

**- VISION -**

The Interdisciplinary Pain Program at the University of Western Ontario identifies the study of pain as a priority that bridges academic disciplines. Integrating the fields of acute and chronic pain will encourage the development of new paradigms for prevention and treatment of chronic pain. Individuals with persistent chronic pain will be provided with timely access to an academic, research-focused facility with linkages to the community to promote continuity of care.

**- VALUES -**

- We understand that each individual's experience of pain is unique, affecting their work, their life and relationships in a complex manner.
- We believe in a broad interdisciplinary perspective on the understanding and treatment of pain.
- We value evidence-based practice.
- We support the ongoing search for and dissemination of knowledge in pain management.

**- AWARDS -**

**Robert Teasell**

3<sup>rd</sup> place Poster Award. Macaluso S, **Teasell R**, McClure A, Walton D, Pretty J, Salter K, Meyer M, Sequeira K, Death B. What is the evidence for treating whiplash injuries? 59<sup>th</sup> Annual Meeting of Canadian Association of Physical Medicine and Rehabilitation, Victoria, British Columbia, June 10-13, 2011



**- RESEARCH FUNDING -**

**Shalini Dhir**

“Efficacy of US-guided TAP blocks for post-CS analgesia: Prospective randomized controlled trial,” Lawson LHRI, \$10,000 (2009-2012 (co-investigator)

**Sugantha Ganapathy**

Ganapathy S, Brookes J et al. Canadian Institutes of Health Research, “Needle guidance system for neuraxial analgesia and anesthesia,” March 1, 2011 – March 1, 2015, \$139,554 (co-applicant)

**Patricia Morley-Forster**

Lead applicant on Proposal to Royal College of Physicians and Surgeons of Canada to make Pain Medicine a subspecialty of Anesthesia, 2007 – present.

Constantinescu C, Imasogie N, Morley-Forster PK. Combination ultra low dose naloxone infusion and oral Tramacet for postoperative pain management in elderly patients undergoing joint replacement surgery: A prospective randomized, controlled trial. Earl Russell Pain Program Trainee Award, \$10,000 (mentor)

McGrath PJ et al. Identification of physical and psychosocial predictors of chronic pain in children and adolescents: A first step towards prevention. Canadian Institutes of Health Research, Population and Public Health, \$99,983 (co-applicant and knowledge user)

Moulin DE et al. Pfizer Canada Inc. “Neuropathic pain database (NePDAT) – Multicentre cohort study of the long term outcome of the management of neuropathic pain,” January 2008 – January 2012, \$993,000 (co-applicant)

**Dwight Moulin**

Prato FS, Thomas AW, Moulin DE et al. Canadian Institutes of Health Research – Operating Grant, “Mechanisms by which low frequency magnetic fields interact with biological systems,” April 1, 2006 – April 1, 2011, \$930,175 (co-applicant at Western).

Moulin DE et al. Pfizer Canada Inc. “Neuropathic pain database (NePDAT) – Multicentre cohort study of the long term outcome of the management of neuropathic pain,” January 2008 – January 2012, \$993,000 (principle investigator)

Moulin DE et al. Pfizer Canada Inc. “Neuropathic pain database (NePDAT) – Long term study of the outcome of chronic neuropathic pain in primary care,” November 2009 – November 2012, \$500,000 (principle investigator)

Moulin DE. Canadian Institutes of Health Research – Patient-Oriented Research Program. “Methadone for Neuropathic Pain – Double-Blind, Randomized, Controlled Trial,” April 2010 – April 2013, \$602,633 (co-applicant at Western)

**Frank Prato**

Prato FS (project leader),  
Koropatnick J (project co-leader),  
Thomas AW et al. Biomedical  
multimodality hybrid imaging,

Canadian Foundation for Innovation  
(CFI) Leading Edge Fund and  
Ontario Research Fund (ORF),  
Project No. 11358, \$30,000,000,  
2007-2012

Prato FS (PI), Thomas AW, Moulin  
DE. Mechanisms by which low  
frequency magnetic fields interact  
with biological systems. Canadian  
Institutes of Health Research –  
Operating Grant, \$930,175, 2006 –  
2011

Stodilka RZ (PI), Prato FS, Thomas  
AW. Localizing brain activities with  
EEG and MRI. National Defence  
(Canada), \$149,604, 2009 – 2011

**Keith Sequeira**

Wolfe DL, Ethans KE, Keast D,  
O'Connell C, Petrella R, Worley S,  
Potter PJ, Sequeira K. SCI Solutions  
Network/Ontario Neurotrauma  
Foundation, "Feasibility of an internet  
clinic for treating and preventing  
pressure ulcers," 2009 – 2011,  
\$351,234

Wolfe DL, Martin GK, Hicks A,  
Legassic M, Fraser C, Petrella R,  
Persad R, Sequiera KAJ, Potter PJ.  
SCI Solutions Network, "The online  
physical activity and nutritional  
counseling (OPAN) demonstration  
project, 2010 – 2011, \$98,000

**Robert Teasell**

McDermid J, Santaguida P, Gross A,  
Reid D, Walton M, Buckley D, Cote  
Teasell R. Canadian Institutes of  
Health Research, "Synthesizing  
research evidence into clinical  
recommendations for managing neck  
pain," 2010 – 2011, \$98,605

**Alex Thomas**

Thomas AW (PI), Legros A. Hydro  
Quebec Research Project Phase III  
– magnetophosphenes and  
neurophysiological investigations of  
power-line frequency magnetic  
fields. Hydro Quebec/Electricite de  
France/Reseaux Transport  
Electricite, \$1,200,000, 2011 - 2014

Thomas AW. Industry match for  
Canadian Institutes of Health  
Research Industry-Partnered Chair,  
Hydro Quebec/Electricite de  
France/Reseaux Transport  
Electricite (Part of Phase III),  
\$300,000, 2011 – 2014

Legros A (PI), Thomas AW. Impact  
of an extremely low frequency  
magnetic stimulus between 5 and 50  
mT on human neurophysiological  
function: A multidimensional  
approach at 60 Hz. Canadian  
Institutes of Health Research  
Operating Grant, Industry Partnered,  
\$428,010, 2011 – 2014

Prato FS (project leader),  
Koropatnick J (project co-leader),  
Thomas AW et al. Biomedical  
multimodality hybrid imaging.  
Canada Foundation for Innovation  
(CFI) Leading Edge Fund and

Ontario Research Fund (ORF),  
\$30,000,000, 2007 – 2012

Prato FS (PI), Thomas AW, Moulin DE et al. Mechanisms by which low frequency magnetic fields interact with biological systems. Canadian Institutes of Health Research Operating Grant, \$930,175, 2006 - 2011

## - PUBLICATIONS -

### Peer-Reviewed Articles

Azari P, Lu Y, **Clarke CF**, Collins T, Briones D, Huh B. Pathophysiology of the spreading of complex regional pain syndrome revisited: A case report. *Neuromodulation* 14(5): 428-31, 2011

**Clarke CF**, Azari P and Huh B. Damaged insulation mimicked symptoms of occipital stimulator lead migration. *Neuromodulation* 14(6): 539-41, 2011

Badner NH, Nicolaou G, **Clarke CF**, Forbes TL. Use of spinal near-infrared spectroscopy for monitoring spinal cord perfusion during endovascular thoracic aortic repairs. *J Cardiothorac Vasc Anesth* 25(2): 316-9, 2011

**Ganapathy S**, Brrokes J, Bourne R. Local infiltration analgesia. *Anesthesiology Clinics* 29(2): 329-42, 2011

**Ganapathy S**, Chan V. Regional analgesia and acute pain

management: Major leaps in small steps? *Anesthesiology Clinics* 29(2): xiii-xiv, 2011 (Editorial)

Quan H, Biondo PD, Stiles C, **Moulin DE**, Hagen N. A patient completed and optically read data acquisition system for clinical trials. *Contemporary Clinical Trials* 2(32): 173-177, 2011

Hagen NA, Stiles CR, Biondo PD, Cummings GG, Fainsinger RL, **Moulin DE**, Pereira JL, Spice R. Establishing a multicenter clinical research network: Lessons learned. *Current Oncology* 18: 243-249, 2011

Lynch ME, Clark AJ, **Moulin DE**, Watson CPN. Modifications are suggested for the Special Interest Group (SIG) on neuropathic pain proposed definition and guidelines for neuropathic pain. *Pain* 152: 1682, 2011

Walton DM, MacDermid JC, **Teasell R**, **Nielson RW**, Nailer T, Maheu P. A descriptive study of pressure pain threshold at two standardized sites in people with acute or subacute traumatic neck pain. *Journal of Orthopedic & Sports Physical Therapy* 41: 651-57, 2011

Walton DM, MacDermid JC, **Teasell R**, **Nielson RW**, Reese H, Levesque L. Pressure pain threshold testing demonstrates predictive ability in people with acute whiplash. *Journal of Orthopedic & Sports Physical Therapy* 41: 658-65, 2011

Walton DM, MacDermid JC, **Nielson WR, Teasell R**, Chiasson M, Brown L. Reliability, standard error and minimum detectable change of clinical pressure pain threshold testing in people with and without acute neck pain. *Journal of Orthopedic & Sports Physical Therapy* 41: 644-50, 2011

Kratz AL, Molton IR, Jensen MP, Ehde DM, **Nielson RW**. Further evaluation of the motivational model of pain self-management: Coping with chronic pain in multiple sclerosis. *Annals of Behavioural Medicine* 41: 391-400, 2011

McKillop JM and **Nielson RW**. Improving the utility of the Multidimensional Pain Inventory. *Pain Research & Management* 15: 239-244, 2011

Belton M, **Prato FS**, Carson JJ. Effect of glutathione depletion, hyperthermia and a 100-mT static magnetic field on an hsp70/luc reporter system. *Bioelectromagnetics* 32(6): 453-62, 2011

Corbacio M, Brown S, Dubois S, **Prato FS, Thomas AW** and Legros A. Human cognitive performance in a 3000 microTesla power line frequency magnetic field. *Bioelectromagnetics* 32: 620-33, 2011

Legros A, Corbacio M, Beuter A, Modolo J, Goulet D, **Prato FS, Thomas AW**. Neurophysiological and behavioural effects of a 60 Hz,

1800 microTesla magnetic field in humans. *European Journal of Applied Physiology* (Epub ahead of print), September 6, 2011

Legros A, Miller J, Modolo J, Corbacio M, Robertson J, Goulet D, Lambrozo J, Plante M, Souques M, **Prato FS, Thomas AW**. Multi-modalities investigation of 60 Hz

magnetic field effects on the human central nervous system. *Electra* 256: 4-18, 2011

Marshall HR, Stodilka RZ, Theberge J, Sabondjian E, Legros A, Deans L, Sykes JM, Thompson RT, **Prato FS**. A comparison of MR-based attenuation correction in PET versus SPECT. *Physics in Medicine and Biology* 56(14): 4613-29, 2011

McNamee DA, Corbacio M, Weller JK, Brown S, Stodilka RZ, **Prato FS**, Bureau Y, **Thomas AW**, Legros AG. The response of the human circulatory system to an acute 200- $\mu$ T, 60 Hz magnetic field exposure. *International Archives of Occupational and Environmental Health* 84(3): 267-77, 2011

Modolo J, Legros A, **Thomas AW**, Beuter A. Modeling-driven therapeutic treatment of neurological disorders: Reshaping brain rhythms with neuromodulation. *Interface Focus* 1(1): 61-74, 2011

Owen DG, Clarke CF, Bureau Y, Ganapathy S, **Prato FS, St. Lawrence KS**. Measuring the neural response to continuous

intramuscular infusion of hypertonic saline by perfusion MRI. J Magnetic Resonance Imaging (Epub ahead of print) September 23, 2011

**Prato FS**, Desjardins-Holmes D, Keenlside LD, DeMoor JM, Robertson JA, Stodilka RZ, **Thomas AW**. The detection threshold for extremely low frequency magnetic fields may be below 1000 nT-Hz in mice. Bioelectromagnetics 32(7): 561-569, 2011

Stodilka RZ, Modolo J, **Prato FS**, Robertson J, Cook C, Patrick J, Beuter A, **Thomas AW**, Legros AG. Pulsed magnetic field exposure induces lasting changes in neural network dynamics. Neurocomputing 74: 2164-2175, 2011

Murie-Fernandez M, Carmona IM, Gnanakumar V, Meyer M, Foley N, **Teasell R**. Hombro doloroso en pacientes con ictus (Painful hemiplegic shoulder in stroke patients: Causes and management). Neurologia Apr 21, 2011 (Epub ahead of print)(Spanish)

#### - PUBLICATIONS -

##### Non-Peer Reviewed

Robertson JA, **Thomas AW**, Modolo J, Miller J, Juen N, Legros A, **Prato FS**. Evolution of hybrid functional imaging in bioelectromagnetics research. (Invited manuscript) The Environmentalist 31(2): 134-139, 2011

##### Abstracts

Toth C, Trang T, **Moulin DE**. Diabetic neuropathic pain: From bench to bedside or bedside to bench? Pain Research and Management 16, 2011

Miller TA, Ross DC, **Thomas AW**. Neurorehabilitation following neurotization: radial nerve transfer to axillary nerve in brachial plexus reconstruction. ASPN – American Society of Peripheral Nerve. Cancun, Mexico, January 14-16, 2011

Juen N, Modolo J, **Thomas AW**, Legros A. Is human brain activity modulated by power line frequency magnetic field exposure? European Bioelectromagnetics Association Conference. Rome. Italy, February 21-24, 2011

Legros A, Corbacio M, Miller J, Modolo J, Juen N, Goulet D, Lambrozo J, Plante M, Souques M, **Prato FS**, **Thomas AW**. From behavioural monitoring to functional brain imaging: Impact of a 60 Hz magnetic field at 1.8, 3 and up to 50 mT in humans. European Bioelectromagnetics Association Conference. Rome, Italy, February 21-24, 2011

Modolo J, Stodilka RZ, **Prato FS**, **Thomas AW**, Legros A. Frequency preference in a Hodgkin-Huxley neuron interacting with extremely low frequency magnetic fields: implications for biological effects. European Bioelectromagnetics

Association Conference. Rome, Italy, February 21-24, 2011

**Thomas AW**, Legros A. 3000  $\mu$ T 60 Hz magnetic exposure and human functional brain activation. 10<sup>th</sup> International Conference of the European Bioelectromagnetics Association (EBEA), URSI-k/EBEA/EDF satellite workshop "Power Line Frequency Magnetic Fields: Recent Human Studies and Future Developments". Rome, Italy, February 21-24, 2011

Legros A, Miller J, Modolo J, Corbacio M, Robertson J, Goulet D, Lambrozo J, Plante M, Souques M, **Prato FS, Thomas AW**. Multi-modalities investigation of 60 Hz magnetic field effects on the human central nervous system. 2<sup>nd</sup> International Conference on EMG-ELF (CIGRE). Paris, France, March 24-25, 2011

Modolo J, Juen N, Robertson J, **Thomas AW**, Legros A. EEG frequency analysis of 60 Hz magnetic field exposure within the MRI. 2<sup>nd</sup> International Conference on EMF-ELF (CIGRE). Paris, France, March 24-25, 2011

Miller J, Modolo J, Corbacio M, Goulet D, Lambrozo J, Plante M, Souques M, **Prato FS, Thomas AW**, Legros A. Functional magnetic resonance imaging of the effects of a 60 Hz 3000  $\mu$ T magnetic field on resting state brain blood flow. International Society for Magnetic Resonance in Medicine, 19<sup>th</sup>

Scientific Meeting and Exhibition. Montreal, Quebec, May 2011

Robertson J, Juen N, Modolo J, Miller J, Theberge J, **Prato FS, Thomas AW**. Hybrid fMRI/EEG investigation of pulsed magnetic field effects on neuroprocessing. 33<sup>rd</sup> Annual Bioelectromagnetics Society Meeting. Halifax, Nova Scotia, June 2011

Modolo J, Beuter A, Cates J, Jog M, Buhran A, **Prato FS, Thomas AW**, Legros A. Bidirectional coupling between motor cortex and muscular activity during resting tremor in Parkinson's disease. Movement Disorders Society International Congress. Toronto, Ontario, June 5-9, 2011

Miller J, Modolo J, Corbacio M, Goulet D, Lambroze J, Plante M, Souques M, **Prato FS, Thomas AW**, Legros AG. Exposure to a 60 Hz 3000  $\mu$ T magnetic field has an effect on resting brain blood flow: A functional magnetic resonance imaging study. 33<sup>rd</sup> Annual Bioelectromagnetics Society Meeting. Halifax, Nova Scotia, June 12-17, 2011

**Prato FS**, Robertson J, Desjardins-Holmes D, Keelaside L, DeMoor J, Stodilka R, **Thomas AW**. The nociception response to ELF magnetic field exposure is an ideal observable in the study of the initial biophysical detection mechanism. 33<sup>rd</sup> Annual Bioelectromagnetics Society Meeting. Halifax, Nova Scotia, June 12-17, 2011

Belton M, **Prato FS**, Carson JJ. Real time characterization of Hsp70 response to heat stimuli. 33<sup>rd</sup> Annual Bioelectromagnetics Society Meeting, Halifax, Nova Scotia, June 12-17, 2011

Legros A, Cates J, Robertson J, Modolo J, Juen N, Miller J, **Prato FS**, **Thomas AW**. Simultaneous EEG/EMG/MRI: A powerful hybrid-imaging window on brain activation patterns during and following time-varying magnetic stimuli. 30<sup>th</sup> URSI General Assembly and Scientific Symposium, Session K08: Biomedical Applications: Imaging and Brain Mapping, Istanbul, Turkey, August 2011

**Prato FS**, Thompson RT, Stodilka RZ, Marshall HR, DeVito TD, Robertson JA, **Thomas AW**, Theberge J. Hybrid brain imaging with MRI/PET. 30<sup>th</sup> URSI General Assembly and Scientific Symposium. Istanbul, Turkey, August 2011

Macaluso S, **Teasell R**, McClure A, Walton D, Pretty J, Salter K, Meyer M, **Sequeira K**, Death B. What is the evidence for treating whiplash injuries? *Journal of Rehabilitation* 43(8): 749, 2011

**- NATIONAL AND  
INTERNATIONAL  
PRESENTATIONS AND  
WORKSHOPS –**

**Bellingham G**. Opioid tolerance and pain (Panel Discussion Presenter). Canadian

Anesthesiologists's Society Annual Meeting, Toronto, ON, June 2011

**Clarke, Collin**. Current controversies in pain management. Peri-operative Nursing Rounds, St. Joseph's Health Care, London, ON. November 30, 2011

**Ganapathy S**. Needle tracking, 3D and 4D imaging. ASRA, 2011

**Ganapathy S**. Basics of US for regional anesthesia. Wayne State University annual workshop, May 2011

**Ganapathy S**. Anesthesia and fast track for minimally invasive cardiac surgery, ASA annual meeting, October 2011

**Ganapathy S**. PVB and lumbar plexus blocks. Advanced USGRA workshops, University of Toronto, March and December 2011

**Ganapathy S**. TAPB, IIN blocks. Advanced USGRA workshops, University of Toronto, March and December 2011

**Ganapathy S**. Saphenous and oburator, LFCN blocks. Advanced USGRA workshops, University of Toronto, March and December 2011

**Ganapathy S**. MGH on needle tracking. Visiting Professor Lecture, September 2011

**Moulin DE**. Assessment and management of failed back surgery syndrome. Canadian Pain Society

Refresher Course, Ottawa, ON,  
February 27, 2011

**Moulin DE.** Diabetic neuropathic  
Pain: Evidence-based medicine.

Canadian Pain Society Meeting,  
Niagara Falls, ON, April 16, 2011

**Moulin DE.** Understanding pain after  
a spinal cord injury. Canadian  
Paraplegic Association Ontario,  
London, ON, May 25, 2011

**Moulin DE.** Fibromyalgia  
symposium—Is it a central  
neuropathic pain or a condition of  
psychological distress? (Chair),  
British Pain Society and Canadian  
Pain Society Annual Scientific  
Meeting, Edinburgh, Scotland, June  
24, 2011

**Morley-Forster P.** Grand Rounds,  
Department of Anesthesiology,  
Ottawa Hospital, The New Royal  
College Subspecialty Program of  
Pain Medicine, Ottawa, ON (invited  
speaker)

**Morley-Forster P.** Canadian  
Interventional Pain Course.  
Introduction of Pain Fellowship by  
the Royal College, McMaster  
University, Hamilton, ON, April 2011  
(invited speaker)

**Nielson WR.** Pathophysiology of  
fibromyalgia syndrome. Workshop  
for Family Physicians, Sarnia,  
Ontario, February 2011

Finan PH, Burns JW, Jensen MP,  
**Nielson WR**, Kerns RD. Pain coping

skills, but not readiness to change,  
as associated with pain-related  
functioning at pretreatment. Paper  
presented at the 32<sup>nd</sup> Annual  
Meeting of The Society of  
Behavioural Medicine, Washington,  
D.C., April 2011

Burns JW, Jensen MP, **Nielson WR**,  
Kerns RD. CBT for chronic pain:  
Specific vs. nonspecific therapeutic  
mechanisms. Paper presented at the  
32<sup>nd</sup> Annual Meeting of The Society  
of Behavioural Medicine,  
Washington, D.C., April 2011

Stone S, Mazmanian D, **Nielson  
WR**, Cane D. Detecting pain  
simulation using the Patterns of  
Activity Measure – Pain and the Brief  
Pain Inventory. Paper presented at  
the Annual Meeting of the Canadian  
Psychological Association, Toronto,  
Ontario, June 2011

**Nielson WR.** Psychological aspects  
of scleroderma and the London  
Multidisciplinary Treatment Program.  
Hamilton Scleroderma Update 2011,  
McMaster University, Hamilton,  
Ontario, September 2011

**Prato FS.** 3000  $\mu$ T 60 Hz magnetic  
exposure and human cognitive  
function. 10<sup>th</sup> International  
Conference European  
Bioelectromagnetics Association.  
Rome, Italy, February 20-24, 2011

Legros A, Miller J, Modolo J,  
Corbacio M, Robertson J, Goulet D,  
Lambrozo J, Plante M, Souques M,  
**Prato FS, Thomas AW.** Multi-  
modalities investigation of 60 Hz



magnetic field effects on the human central nervous system. 2<sup>nd</sup> International Conference on EMG-ELF (CIGRE), Paris, France. March 24-25, 2011

**Prato FS.** The Canadian National Committee of URSI – Our role and contribution to the International Organization. URSI/URSI-CNC Symposium. Montreal, Quebec, May 30, 2011

Legros A, Cates J, Robertson J, Modolo J, Juen N, Miller J, **Prato FS**, **Thomas AW.** Simultaneous EEG/EMG/fMRI: A powerful hybrid imaging window on brain activation patterns during and following time-varying magnetic stimuli. 30<sup>th</sup> URSI General Assembly and Scientific Symposium, session K08: Biomedical Applications: Imaging and brain mapping. Istanbul, Turkey, August 2011

**Prato FS**, Thompson RT, Stodilka RZ, Marshall HR, DeVito T, Robertson J, **Thomas AW**, Legros AG. Hybrid brain imaging with MRI/PET. 30<sup>th</sup> URSI General Assembly and Scientific Symposium. Istanbul, Turkey, August 2011

Macaluso S, **Teasell R**, McClure A, Walton D, Pretty J, Salter K, Meyer M, **Sequeira K**, Death B. What is the evidence for treating whiplash injuries? 59<sup>th</sup> Annual Scientific Meeting of the Canadian Association of Physical Medicine and Rehabilitation. Victoria, British Columbia, June 10-13, 2011

Mehta S, Salter K, **Teasell R**, Hsieh J, Aubut JA, Townson A, Short C, Wolfe D and the SCIRE Research Group. Gabapentinoids in decreasing neuropathic pain intensity post SCI: A meta-analysis. GTA Best Practices Day, Toronto, Ontario, March 4, 2011, Poster 21, p. 48

**Teasell R.** Management of chronic pain: Giving in is not giving up. Learning After Five – UWO Department of Psychiatry, October 25, 2011

Modolo J, Juen N, Robertson J, **Thomas AW**, Legros A. EEG frequency analysis of 60 Hz magnetic field exposure within the MRI. 2<sup>nd</sup> International Conference on EMF-ELF (CIGRE), Paris, France. March 24-25, 2011

**- UNDERGRADUATE EDUCATION PROGRAM -**

The pain program continues to be very active in pain education at the undergraduate level. This includes a Year 4 selective on Pain Medicine which was attended by approximately 100 students. This is a 12-hour multi-disciplinary course provided by neurologists, anesthesiologists, a psychiatrist, a psychologist, a palliative care specialist and a pharmacist. The evaluations for this Year 4 course have consistently been excellent. Small group one hour seminars on management of cancer pain are also provided to all the Clinical Clerks rotating through Oncology. Many medical students attend various pain clinics throughout the city.

**- POSTGRADUATE / FELLOW EDUCATION PROGRAM -**

Anesthesiology residents have a one-month mandatory rotation in the SJHC Interdisciplinary Pain Clinic. Neurology and physiatry residents also attend this clinic on a selective basis. Fellows in the Pain Program for 2011 were all trained in Anesthesiology—Dr. Wern-Hsien Bin (Singapore), Dr. Raj Manikandan (India) and Dr. Osama Abdulhadi (Saudi Arabia). Dr. Bin developed an evidence-based pathway for the treatment of complex regional pain syndrome. Dr. Manikandan designed and implemented a study of the plasma concentrations of ketamine and norketamine in patients using topical application of 10% ketamine gel for neuropathic pain. Dr. Abdulhadi studied the risk of addiction in cancer patients being treated with opioid analgesics for the management of cancer pain. These latter studies will be presented at pain meetings in 2012.

The Royal College Pain Medicine Subspecialty initiative is now in Phase 3 with approval of the curriculum and accreditation standards by the Royal College committee headed by Dr. Pat Morley-Forster. This 2-year fellowship in Pain Medicine is scheduled to start July 2014. A program director will have to be designated at each academic centre at least one year prior to initiation of this Fellowship. The program director will require input from various stakeholders including psychology, psychiatry, pediatrics and rheumatology.

**- CONTINUING MEDICAL EDUCATION PROGRAM -**

The Neuropathic Pain Workshop was again held in November for family physicians and allied healthcare workers throughout southwestern Ontario. This workshop was interactive and again included actual interviews and examinations of patients with neuropathic pain and this workshop was again very well-received.

Interdisciplinary Pain Rounds and Conferences continue to be very popular at U.W.O. A list of seminar topics and lectures follows on the next page.

**- INTERDISCIPLINARY PAIN ROUNDS AND CONFERENCES 2011 -**

- January 26 Neuroanatomical Basis of Waddell's Non-Organic Signs. **Dr. Dan Ranney**, Professor Emeritus, Faculty of Applied Sciences, University of Waterloo & Founder, School of Anatomy, Waterloo, Ontario
- February 23 Restorative Sleep and Why It Is Important for Pain. **Dr. Colin Shapiro**, Professor Psychiatry & Ophthalmology, University of Toronto; Director, Sleep & Alertness Clinic & Sleep Research Laboratory, Toronto Western Hospital, Toronto, Ontario
- April 28 Chronic Noncancer Pain and Co-Morbid Psychiatric Disorders. **Dr. Jeffrey H. Ennis**, Assistant Professor McMaster University Medical Centre, Departments of Physical Medicine & Rehabilitation and Psychiatry, Hamilton, Ontario
- May 25 Use of Electromyography in Chronic Pain. **Dr. Ammar Gilani**, Associate Professor Department of Medicine/Neurology Section, McMaster University, Hamilton, Ontario
- September 28 Pain: Looking Through the Pharmacogenetic Keyhole. **Dr. Craig Railton**, Assistant Professor Department of Anesthesia & Perioperative Medicine and Division of Clinical Pharmacology, University of Western Ontario, London, Ontario
- October 28 Chronic Myofascial Pain – Evidence-Based Medicine. **Dr. Dinesh Kumbhare**, Associate Clinical Professor Department of Medicine, Michael G. DeGroote School of Medicine, McMaster University, Hamilton, Ontario
- November 30 The Management and Prevention of Herpes Zoster and Postherpetic Neuralgia. **Dr. Myron J. Levin**, Professor Pediatrics & Medicine, University of Colorado, Denver, Colorado, U.S.A.