

CURRICULUM VITAE

**COLIN JOHN LINDSAY MCCARTNEY
MBChB PhD FRCA FCARCSI FRCPC**

**PROFESSOR AND CHAIR OF ANESTHESIOLOGY
FACULTY OF MEDICINE
UNIVERSITY OF OTTAWA**

**HEAD OF ANESTHESIOLOGY
THE OTTAWA HOSPITAL**

NAME AND CONTACT INFORMATION:

Name: Colin John Lindsay McCartney
Date of Birth: July 26, 1968
Citizenship: British and Canadian

Business Address: Department of Anesthesiology
The Ottawa Hospital, Civic Campus
1053 Carling Avenue, B311
Ottawa, ON, K1Y 4E9, Canada

Telephone: 613 761 4940
Fax: 613 761 5209
E-mail: cmccartney@toh.on.ca
Web: <http://scholar.google.ca/citations?user=6BTXOeQAAAAJ&hl=en>

A. DATE CURRICULUM VITAE UPDATED: NOVEMBER 24TH, 2015

B. BIOGRAPHICAL INFORMATION

1. Education

2014 PhD, University of Edinburgh
2005 Fellow, Royal College of Physicians of Canada (FRCPC)
1999 Specialist Register, Anaesthesia, United Kingdom
1996 Fellow, Royal College of Anaesthetists, UK (FRCA)
1996 Fellow, College of Anaesthetists, Royal College of Surgeons in Ireland (FCARCSI)
1991 MBChB, Edinburgh University

Licensure: Independent Practice Certificate, CPSO 2005-present (73247)
Full registration, General Medical Council, UK, 1992-present (3276303)

2. Employment History

Current Appointments

2014-present Professor and Chair, Department of Anesthesiology, University of Ottawa
2014-present Head of Anesthesiology, The Ottawa Hospital
2014-present Scientist, Ottawa Hospital Research Institute

Previous Appointments

2006-2014 Staff Anesthesiologist, Sunnybrook Health Sciences Centre
2012-2014 Director of Anesthesia Research, Sunnybrook Health Sciences Centre
2006-2014 Director of Research in Acute Pain and Regional Anesthesia
Department of Anesthesia, Sunnybrook Health Sciences Centre

2013-2014	Professor of Anesthesia, University of Toronto
2006-2014	Associate Scientist, Sunnybrook Health Sciences Centre
2009-2014	Associate Member, Graduate Faculty, Institute of Medical Science
2006-2013	Associate Professor, Department of Anesthesia, University of Toronto
2000-2006	Staff Anesthesiologist, Toronto Western Hospital
2000-2006	Assistant Professor, Department of Anesthesia, University of Toronto
1999-2000	Research Fellow, Toronto Western Hospital
1995-1999	Anaesthetic Registrar, Aberdeen Royal Infirmary Clinical Lecturer, University of Aberdeen, Scotland
1993-1995	Anaesthetic Senior House Officer, Dundee Teaching Hospitals Clinical Scholar, University of Dundee, Scotland

Previous Postgraduate Clinical Appointments

2000-2006	Director of Regional Anesthesia and Staff Anesthetist, Toronto Western Hospital
2000-2003	Consultant in Pain Management, Wasser Pain Management Centre, Mount Sinai Hospital
1999-2000	Fellow in Regional Anaesthesia and Pain Management, Toronto Western Hospital
1995-1999	Specialist Registrar in Anaesthesia, Grampian, Highlands and Islands
1993-1995	Senior House Officer in Anaesthesia, Tayside Rotation, Scotland
1992-1993	Senior House Officer in Neonatology, Ninewells Hospital, Dundee, Scotland

3. Honours and Career Awards

Distinctions and Research Awards

2011	Exceptional Contribution to Peer Review, British Journal of Anaesthesia (one of 9 reviewers to be awarded this honour in 2011)
2013	Winner of British Medical Association Medical Book Award in Anaesthesia and Critical Care Category for Principles and Practice of Regional Anaesthesia, 4 th Edition, Oxford University Press.

Teaching Awards

2011	Regional Anesthesia Teacher of the Year Award, Sunnybrook HSC
2008	Regional Anesthesia Teacher of the Year Award, Sunnybrook HSC
2007	Regional Anesthesia Teacher of the Year Award, Sunnybrook HSC

4. Professional Affiliations and Activities

Professional Associations

2011-present	American Society of Anesthesiologists
2002-2014	University of Toronto Centre for the Study of Pain
2000-present	Canadian Medical Association
2000-present	Ontario Medical Association

2000–present	Canadian Anesthesiologists’ Society
2000–present	American Society of Regional Anesthesia
1996–present	International Association for the Study of Pain
1996–present	Royal College of Anaesthetists, UK

Administrative and Leadership Activities

Current Leadership Roles:

Head of Anesthesiology, The Ottawa Hospital
 Chair of Anesthesiology, University of Ottawa
 Member, Board of Directors, American Society of Regional Anesthesia and Pain Medicine
 Chair, Committee on Research, American Society of Regional Anesthesia and Pain Medicine
 Chair, Gaston Labat Award Committee, American Society of Regional Anesthesia and Pain Medicine

Previous Leadership Roles:

Sunnybrook Health Sciences Centre, Toronto:

2013-2014	Division Head, Obstetric Anesthesia
2012-2014	Director of Research, Department of Anesthesia
2012-2014	Designated Interim Chief of Anesthesia
2012-2014	MSK program council
2012-2014	Patient Care Committee, Holland Orthopedic and Arthritic Centre

University Health Network, Toronto:

2001-2004	Member, Research Ethics Board
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Department of Anesthesia, University of Toronto:

2007-2012	Promotions Committee, Department of Anesthesia
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University of Toronto Centre for the Study of Pain:

2013-2014	Associate Director (covering sabbatical of Bonnie Stevens)
2011-2014	Chair, Knowledge Translation Committee
2010-2014	Member, Executive Committee

Provincial and National Activities:

Canadian Anesthesiologists’ Society:

2008-present	Member, Research Committee
2007-2008	Chair, Regional Anesthesia and Acute Pain Section

Health Quality Ontario:

2012	Member, Hip Fracture Care, Episode of Care Expert Panel
2013	Member, Primary Hip and Knee Replacement, Episode of Care Expert Panel

International Activities:

American Society of Regional Anesthesia and Pain Medicine:

2009-2012 Chair and Editor, Newsletter Committee
2006-2009 Member, Newsletter Committee
2006 Chair, Expert Group on the Use of Ultrasound in Regional Anesthesia

Peer Review Activities:

2011-present Editor, Regional Anesthesia and Pain Medicine
2012-present Associate Editor, British Journal of Anaesthesia
2007-present Editorial Board, Local and Regional Anaesthesia
2006-present Editorial Board, Journal of Opioid Management
2006-2011 Associate Editor, Regional Anesthesia and Pain Medicine
2007-2011 Editorial Board, Anesthesiology Research and Practice

Manuscript Reviewer:

Acta Anesthesiologica Scandinavica, Anaesthesia, Anesthesiology, Anesthesia & Analgesia
British Journal of Anaesthesia (one of top 9 reviewers in 2011), Canadian Journal of Anesthesia, Clinical Journal of Anesthesia, European Journal of Anaesthesiology, Pain, Regional Anesthesia and Pain Medicine
Clinical and Experimental Physiology and Pharmacology, Journal of Postgraduate Medicine, Mechanical and Biological Engineering and Computing.

Abstract Reviewer:

American Society of Regional Anesthesia and Pain Medicine
International Anesthesia Research Society
Canadian Anesthesiologists' Society

External Grant Reviewer:

Chief Scientist Office, Scottish Government
Canadian Institutes of Health Research
National Institute of Academic Anaesthesia, United Kingdom
Canadian Anesthesiologists' Society
Physicians Services Incorporated Foundation
Alberta Heritage Foundation for Medical Research
Medical Research Council, UK
Netherlands Organization for Health Research and Development

Other Research and Professional Activities

2009-2014 Associate Member, Institute of Medical Sciences, University of Toronto
2006-2014 Associate Scientist, Sunnybrook Research Institute

Visiting Professorships and Keynote Lectures:

2016	Visiting Professor, Weill Medical College, Cornell University, New York, NY
2016	Visiting Professor, University of Pennsylvania, Philadelphia, PA
2016	Keynote Speaker, College of Anaesthetists in Ireland, Dublin, Ireland
2016	Visiting Professor, Queen's University, Kingston, ON
2015	Visiting Professor, Hospital for Special Surgery, New York, NY
2015	Visiting Professor, Mayo Clinic, Rochester, MN
2013	Visiting Professor, Penn State, Hershey, Medical Centre, PA
2013	Visiting Professor, University of Calgary, AB
2013	Visiting Professor, University of Florida, Gainesville, FL
2011	Visiting Professor, Radboud University, Nijmegen, Netherlands
2010	Keynote Speaker, University College London, UK
2009	Visiting Professor, University of Western Ontario, London, Ontario
2009	Keynote Speaker, Australasian Society of Ultrasound in Regional Anaesthesia, Brisbane, Australia
2009	Keynote speaker, Department of Anesthesia, Wake Forest University Medical Centre
2008	Visiting Professor, University of California, San Diego, CA
2008	Keynote speaker, University College, Dublin, Ireland
2007	Visiting Professor, University of Oslo, Norway
2006	Visiting Professor, Walter Reed Army Medical Centre, Washington, DC
2006	Visiting Professor, National Naval Medical Centre, Bethesda, Maryland
2006	Visiting Professor, Hospital for Special Surgery, New York, NY

Course Development:

2010-2014	Co-Director, Ski and Scan 2012, Banff, AB
2011-2014	Co-Director, Holland Centre Preceptorship on Continuous Peripheral Nerve Blocks
2011-2013	Organizing Committee, 2013 American Society of Regional Anesthesia and Pain Medicine Spring Meeting, Boston, MA
2010-2012	Organizing Committee, 2012 American Society of Regional Anesthesia and Pain Medicine Spring Meeting Spring Meeting, San Diego
2009-2011	Organizing Committee, 2011 American Society of Regional Anesthesia and Pain Medicine Spring Meeting Spring Meeting, Las Vegas
2009-2010	Co-Director, Ski and Scan 2010, Lake Louise, AB
2008	Co-Director, Ultrasound Guidance for Diagnosis and Interventional Management of Pain, Glasgow, UK (Satellite Meeting of World Congress of Pain)
2007-2010	Co-Director, Holland Centre Symposium, ON
2003	Member, Local Area Organizing Committee, Canadian Pain Society Annual Meeting, Toronto, ON

C. ACADEMIC PROFILE

1. LEADERSHIP STATEMENT

I am first and foremost a physician whose greatest pleasure comes from caring for patients. However I realize that leading and motivating other colleagues to care for our patients is a vital role in our health care system. I have greatly enjoyed the opportunities I have had in my career to lead others but realize I have much to learn to make the most of my leadership skills.

Currently I am the Head of Anesthesiology at The Ottawa Hospital and Chair of Anesthesiology at University of Ottawa. I have been a member of the senior leadership team at The Ottawa Hospital since September 2014 and have greatly enjoyed being an integral member of that excellent team. As Head of Anesthesiology and one of the key members of the perioperative leadership team I am responsible for the clinical performance of all anesthesiology staff and students and also for the quality and efficiency of our work in perioperative and pain medicine. As a member of the senior management team I have direct input into the financial stewardship of our hospital and in particular the perioperative budgets. I regard the role of anesthesiology as a key member of the perioperative team who should take leadership for many of the initiatives to improve patient care in the perioperative period including such initiatives as reduction of surgical site infection and quality and patient safety.

In my current role I have responsibility for leading 230 faculty and staff across University of Ottawa. In my first year in the role I have led several initiatives including a strategic planning process at University and Hospital level and a faculty development program for new staff physicians to ensure success in their early academic career.

In the recent past I have led research teams at Sunnybrook Health Sciences Centre and University Health Network and two internationally recognized fellowship programs both at University of Toronto. Those roles involved the successful motivation of a number of staff physicians, fellows, residents and research staff to be active in anesthesiology research and education. As an example, in a recent multicenter perioperative trial, our centre led 15 other international centres with regard to patient recruitment. At a national and international level I am an editor for two anesthesiology journals and have chaired several committees in the Canadian Anesthesiologists Society and the American Society of Regional Anesthesia and Pain Medicine (ASRA). I am currently on the board of directors of ASRA and chair the committee on research. Each of these roles has involved leading and motivating teams of individuals to be creative and productive in clinical care, education and research.

I enjoy challenging the status quo where there are opportunities to improve patient care and have led many initiatives in clinical care, education and research to that end. At Toronto Western Hospital from 2002-2006 I led the regional anesthesia program and examined improvements in the way we care for patients having joint replacement procedures. We developed a process for examining results on a monthly basis and making subtle changes to practice based on clinical results. This led to an improvement in patient care (less pain) and faster discharge after surgery.

At Sunnybrook Health Sciences Centre I developed and led a multidisciplinary functional outcomes research group that led and published a series of clinical research studies to improve the way we care for orthopedic patients. Members of the group included anesthesiologists, surgeons, nurses, physiotherapists and pharmacists all working together to improve quality and efficiency of patient care. Through coordination of care we achieved and exceeded provincial targets for hospital discharge after major joint surgery and at the same time made the Holland Orthopedic and Arthritic Centre a model for the way in which orthopedic care is provided.

Our research studies into ultrasound-guided regional anesthesia have improved quality and safety of regional anesthesia procedures in patient care and have changed practice nationally and internationally. I

have also developed and led local and national conferences focusing on regional anesthesia and pain medicine and have taught delegates from all over the world at these conferences.

The preceptorship that I developed at Sunnybrook Health Sciences Centre to introduce novel pain management methods was attended by many groups from across the province and Canada who then returned to their own institutions to implement change.

I greatly enjoy collaborating with colleagues in other specialties in medicine and colleagues outside medicine. In many of the leadership initiatives above I have worked closely with members of other disciplines across the hospital and university including surgeons, nurses, physiotherapists, pharmacists and other hospital leaders. I have collaborated in research projects with psychologists, social scientists, engineers and physicists. I have worked actively in other professional associations at national and international level and led several committees in these organizations. I have been a member of two expert panels for Health Quality Ontario developing clinical pathways for hip fracture and total hip and knee arthroplasty surgery.

In the last fifteen years I have been fortunate to work with excellent mentors who have guided my ambition to lead positive change in the organizations I have worked. I have been selected for positions of increasing responsibility and each has had different challenges that have allowed learning of new skills. I hope to continue to develop my skills as a leader through working with a variety of other professionals and learning in the process.

2. RESEARCH STATEMENT

Good postoperative pain control is vital for many reasons including reduced cardiac and respiratory complications and faster rehabilitation after surgery. In addition there is evidence that poor pain control immediately after surgery can predispose to chronic pain months and years later. Throughout my career I have focused my energies on the investigation, treatment and education surrounding best practice for pain control after surgery with the specific aim of reducing acute pain, improving function after surgery and determining methods to reduce chronic pain. In particular I have led research teams that have investigated outcomes following use of regional anesthesia and novel analgesic agents such as ketamine, gabapentin and pregabalin to prevent or reduce the incidence of severe acute and chronic pain.

In my seven years at Holland Orthopedic and Arthritic Centre I led a research team with efforts to determine best practice for pain relief in order to optimize rehabilitation after major joint surgery. In addition I have had a strong interest in factors that improve effectiveness and reduce side effects of regional anesthesia techniques in particular with the use of ultrasound guidance.

The research teams that I have led have been published in high quality journals and include research into the use of novel analgesic agents (McCartney et al 2004, Carmichael et al 2013) and the use of ultrasound to improve effectiveness and safety of regional anesthesia (Brull et al 2009). Collaborating with other key colleagues at University of Toronto we have led international efforts demonstrating that ultrasound-guided techniques are both more effective (e.g. Chan et al 2007, McCartney et al 2010, McNaught et al 2011) and may reduce complications following regional anesthesia (Brull et al 2006, Riazi et al 2008, Lo et al 2008). In addition we actively investigated techniques to improve teaching of ultrasound-guided methods for regional anesthesia in order that these methods are taught most effectively (Awad et al 2011, Cheung et al 2011, Cheung et al 2012).

In order to investigate the above areas we used a varied approach including systematic review of the literature (McCartney et al 2004, McCartney et al 2007, McCartney et al 2010, McCartney and Choi 2014), state of the art randomized controlled trials (McCartney et al 2004, Chan et al 2007, Riazi et al 2008, Brull et al 2009, McNaught et al 2011), bench (McCartney et al 2010, Cheung et al 2011) and qualitative methods (Webster et al 2011, Bremner et al 2012) to give a complete picture of the problem, the

effectiveness of the interventions that we are investigating and challenges and questions that remain to be addressed. In the last ten years I have received \$689,000 funding as principal investigator and \$1,737,000 as co-investigator with 87 peer-reviewed publications.

I address two key areas of research in more detail below:

a. Pain control and rehabilitation after orthopaedic surgery

The multidisciplinary research team that I led was recognized internationally for the contribution to acute pain management research for patients following major orthopaedic surgery. The team has had several peer-reviewed funded studies examining the use of novel pain-relieving techniques and their impact on function following total hip and knee replacement. Some of our publications helped to shape attitudes to the way pain is treated following surgery. For example our paper on the clinical use of NMDA receptor antagonists [1, below] made a significant impact on the field through its rigorous definition of preventive analgesia and the evidence that pain outcomes following surgery can be improved with the use of these agents (Citation Count: Google Scholar=249; Web of Science=90). Our paper on discharge times and pain after ambulatory hand surgery [2, below] is the largest randomized controlled trial on this subject (Citation Count: Google scholar=110; Web of Science=35). The team I led performed several randomized trials examining the effectiveness of novel analgesic agents such as gabapentin (Clarke et al 2008) and pregabalin (Carmichael et al 2013) on reducing acute and chronic pain and optimizing function after hip and knee replacement. More recently we examined the impact of newer local anesthetic infiltration techniques for knee replacement with two funded randomized controlled trials and invited editorial commentary in the international anesthesia literature (McCartney and McLeod BJA 2011, McCartney and Choi BJA 2013).

1. **McCartney CJL**, Sinha A, Katz J. A Qualitative Systematic Review of the Effect of NMDA antagonists on Preventive Analgesia. *Anesthesia & Analgesia* 2004; 98: 1385-400.
2. **McCartney CJL**, Brull R, Chan VW; Katz J et al. Early But No Long-Term Benefit of Regional Compared to General Anesthesia For Ambulatory Hand Surgery. *Anesthesiology* 2004; 101: 461-7.
3. Carmichael N, Katz J, Clarke H, Kennedy D , Kreder H, Gollish J, **McCartney CJ**. An intensive perioperative regimen of pregabalin and celecoxib reduces pain and improves physical function scores at 6 weeks following total hip arthroplasty: A prospective randomized controlled trial. *Pain Research and Management* 2013; 18: 127-32.
4. **McCartney CJ**, McLeod GA. Local Infiltration Analgesia. *Br J Anaesth* 2011; 107: 487-9.
5. **McCartney CJ**, Choi S. Does anaesthetic technique really matter for total knee arthroplasty. *Br J Anaesth* 2013; 11:331-333.

b. Use of ultrasound in regional anesthesia

The second key area of research in which I have been involved examined the efficacy and safety of ultrasound imaging in regional anesthesia. Our research group at the University of Toronto produced the largest definitive randomized controlled trials both demonstrating greater efficacy [Chan et al 2007] and reduced complications [Riazi et al 2008, McNaught et al 2011] with the use of these techniques, in comparison with existing methods. In addition I have led efforts to systematically review and disseminate

the evidence for benefit of ultrasound-guided techniques in regional anesthesia at national and international level [McCartney et al 2010, Neal et al 2010]. In 2014 I successfully defended a PhD thesis (by research publications) at University of Edinburgh on Evolution and Impact of Ultrasound Guidance on Brachial Plexus Anaesthesia.

6. Chan VW, Perlas A, **McCartney CJL** et al. Ultrasound guidance improves success rate of axillary brachial plexus block. *Canadian Journal of Anesthesia* 2007; 54: 176-82. (Citation Count: Google Scholar=239; Web of Science=94).
7. Riazi S, Carmichael N, Awad I, Holtby R, **McCartney CJ**. Effect of local anaesthetic volume (20 vs 5ml) on the efficacy and respiratory consequences of ultrasound-guided interscalene brachial plexus block. *Bri J Anaesth* 2008; 101: 549-56 (Citation Count: Google scholar=134; Web of Science=58).
8. McNaught A, Shastri U, Carmichael N, Awad IT, Columb M, Cheung J, Holtby RM, **McCartney CJ**. Ultrasound reduces the minimum effective local anaesthetic volume compared with peripheral nerve stimulation for interscalene block. *Br J Anaesth* 2011; 106: 124-30 (Citation Count: Google scholar=50; Web of Science=18).
9. **McCartney CJL**, Lin L, Shastri U. Evidence basis for the use of ultrasound for upper-extremity blocks. *Reg Anesth Pain Med*. 2010; 35: S10-5.
10. Neal JM, Brull R, Chan VW, Grant SA, Horn JL, Liu SS, **McCartney CJL**, Narouze SN, Perlas A, Salinas FV, Sites BD, Tsui BC. The ASRA evidence-based medicine assessment of ultrasound-guided regional anesthesia and pain medicine: Executive summary. *Reg Anesth Pain Med*. 2010; 35 (2 Suppl): S1-9.

3. TEACHING PHILOSOPHY

I strongly believe in the need for scholarly research in order to evaluate new treatments and techniques however I also strongly believe in the importance and power of effective teaching in order to translate these findings into practice. I have led efforts to translate our research findings into practice by teaching at undergraduate, postgraduate and post certification students at local, national and international levels. My philosophy is that I have always had to be able to support teaching with appropriate evidence but also be a competent practitioner in that area of medicine before being able to effectively teach it to others. In this way my students can have the confidence that I have carefully evaluated (and sometimes generated) the evidence on which my teaching is based but also have used these techniques successfully in my own medical practice.

To be more specific our research studies have demonstrated the benefits of regional anesthesia (e.g. McCartney et al 2004) and multimodal analgesic techniques (e.g. McCartney et al 2007, Carmichael et al 2013) for postoperative pain control and our education programs have attempted to translate these findings into practice. In my previous position the Holland Orthopedic and Arthritic Centre in Toronto was a centre of excellence for performance of arthroplasty surgery and is recognized as a leader at the local, national and international level for postoperative pain management after major joint surgery. For that reason we hosted multidisciplinary teams from several Ontario centres, from Halifax and Edmonton and physicians from overseas who came to learn our practice. In addition I led efforts to develop more formal teaching programs. At the local level we organized an annual multidisciplinary meeting focusing on optimizing pain and function after major joint surgery which attracted delegates from all over Canada

from nursing, physiotherapy and medical backgrounds. More recently we organized a preceptorship program aimed at training physicians, surgeons and nurses in the use of continuous peripheral nerve block techniques-a powerful method of providing postoperative pain control-and were running three courses per year until I left that position. At the national and international level I acted as chair of the regional anesthesia and acute pain section at the Canadian Anesthesiologists' Society and organized the program for the 2007 CAS meeting in Halifax in addition to acting on the program committee for the American Society of Regional Anesthesia (ASRA) Spring Meeting from 2012-2013. I have also edited the newsletter of ASRA from 2009-2012 and wrote and edited many articles for that international newsletter (posted to members all around the world). A particular emphasis in my time as editor was to encourage and grow the number of resident members who wished to write innovative articles for the newsletter. I have led the organization of several innovative ultrasound education courses including a course on ultrasound for chronic pain at the World Congress of Pain in Glasgow in 2008 and an innovative program at Lake Louise, Banff and University of Calgary in 2010 and 2012.

Finally I greatly enjoy the teaching of students and residents especially with regard to pain management and have won awards for my teaching at Sunnybrook Health Sciences Centre in addition to teaching at undergraduate (Medical Student and Postgraduate level).

C. RESEARCH FUNDING

PEER-REVIEWED GRANTS

All amounts listed are total amounts for the grant duration. My role is highlighted in **bold**.

2015-2017	Funding Agency: PSI Foundation: Comparison of the effects of perineural vs systemic dexamethasone on low dose brachial plexus block: a randomized trial. Total funding amount: \$86,000 Co-investigator
2014-2016	Funding Agency: AFP award. Hamilton Health Sciences Centre Pregabalin and Lidocaine in Breast Surgery to alter Neuropathic Pain Total Funding Amount: \$130,434 Co-investigator
2013-2016	Funding Agency: Heart and Stroke Foundation of Ontario Funding program: Grant in aid Grant Title: The METS (Measurement of Exercise Tolerance before Surgery) Study: An International Multicentre Prospective Cohort Study of Cardiopulmonary Exercise Testing For Improving Preoperative Risk Stratification for Major Non-Cardiac Surgery Total Funding Amount: \$144,000 Co-investigator
2013-2015	University of Toronto, Department of Anesthesia Merit Award: OPRA: Optimizing Pain and Rehabilitation after Total Knee Arthroplasty. \$40,000 per year for 2 years Principal Investigator
2013-2015	AFP AWARD: The METS (Measurement of Exercise Tolerance Before Surgery)

Study: A Multicentre Prospective Cohort Study of Cardiopulmonary Exercise Testing for Improving Preoperative Risk Stratification for Major Non-Cardiac Surgery

\$193,404

PRINCIPAL INVESTIGATOR: Duminda Wijesundera

Co -investigator

- 2012-2013 PSI FOUNDATION: Determining the Minimal Effective Volume (MEAV 95) for Interscalene Brachial Plexus Block for Surgical Anesthesia
\$20,000
Co-Principal Investigator with Dr. Stephen Choi
Resident investigator: Jane Wang
Co-investigators: Richard Holtby, Imad Awad
- 2012-2014 Physicians Services Incorporated Foundation: OPRA-Optimizing Pain and Rehabilitation after Total Knee Arthroplasty.
\$141,500
Principal Investigator with Dr. Stephen Choi
PI: James Paul, Hans Kreder, Muhammad Mamdani, Kevin Thorpe, Joel Katz, Jeffrey Gollish, Paul Stratford
- 2012-2013 Canadian Anesthesiologists' Society: OPRA-Optimizing Pain and Rehabilitation after Total Knee Arthroplasty.
\$20,000
Co-investigator
PI: Stephen Choi
- 2012-2016 Canadian Institutes of Health Research: METS: Measurement of Exercise Tolerance for Surgery.
\$980,000
Co-investigator
PI: Duminda Wijesundera, Brian Cuthbertson
- 2011-2013 University of Toronto, Department of Anesthesia Merit Award: Is there any benefit to adding continuous femoral nerve block to local infiltration analgesia for TKA?
\$40,000 per year for 2 years
Principal Investigator
- 2011-2012 Sunnybrook Medical Services AFP 2010-2011 Innovation Fund: Identifying and removing barriers to the use of regional anesthesia for total hip arthroplasty in Ontario
\$60,270
Principal Investigator
Co-investigators: Fiona Webster, Hans Kreder, Judy Watt-Watson, Richard

- Jenkinson, Merrick Zwarenstein, Deborah Kennedy, Alex Kiss.
- 2011-2012 European Society of Regional Anesthesia Grant: Improving success rate of continuous peripheral nerve blocks using a novel coiled catheter
€10,000
Principal Investigator
- 2011-2014 Sunnybrook Musculoskeletal Research Group Salary Award
\$20,000 per annum for 3 years
Principal Investigator
- 2009-2010 PSI FOUNDATION: US or PNS for interscalene brachial plexus block. A randomized controlled trial using Dixon and Massey's Up and Down methodology
\$20,000
Principal Investigator
Resident investigator: Uma Shastri
Co-investigators: Richard Holtby, Imad Awad
- 2008-2010 PSI FOUNDATION: Does optimal control of chronic and acute pain predict improved function after total hip arthroplasty?
\$103,000
Principal investigator
Co-investigators: Nicole Carmichael, Hans Kreder, Joel Katz, Deborah Kennedy, Hance Clarke
- 2008-2009 NETWORK OF EXCELLENCE IN SIMULATION: Efficacy and Quality of Deteriorating Patient-Based Simulation versus Standardized Patient-Based Simulation for Improving Health Care Professionals' Pain Knowledge and Assessment Skills: A Pilot Equivalence Randomized Controlled Trial
\$49,126
Principal Investigators: Michael McGillion and Adam Dubrowski
Co-investigator
- 2008-2009 PSI FOUNDATION: Femoral nerve block: Anatomical insertion point - A prospective randomised double-blind controlled trial
\$37,000
Principal Investigator: Imad Awad
Co-investigator
- 2008-2011 PSI FOUNDATION: Comparing the postoperative functional recovery and analgesic efficacy of a single shot sciatic nerve block versus posterior capsule infiltration of local anesthetic for total knee arthroplasty
\$50,000
Co-Principal Investigator with Ben Safa
Co-investigator: Jeffrey Gollish
- 2009-2011 PFIZER NEUROPATHIC PAIN RESEARCH AWARD: The Short and Long Term Effects of Perioperative Pregabalin Use on Functional Rehabilitation, Pain Outcomes and

- Anxiety following Total Hip Arthroplasty: A Randomized, Double-Blind, Placebo-Controlled Trial
 \$145,000
 Principal Investigator: Hance Clarke
Co-investigator
- 2007-2008 PSI FOUNDATION: Does a low volume ultrasound-guided technique reduce common complications of interscalene brachial plexus block?
 \$19,000
Principal Investigator
 Resident Investigator: Sheila Riaz
 Co-investigators: Richard Holtby, Imad Awad, Carmen Kummer
- 2007 DEANS AWARD, UNIVERSITY OF TORONTO: Role of low fidelity ultrasound training on skills acquisition in Anesthesia residency training
 \$9,240
 Principal Investigator: Imad Awad
Co-investigator
- 2007 CANADIAN ANESTHESIOLOGISTS SOCIETY: The short- and long-term effects of perioperative gabapentin use on functional, rehabilitation and pain outcomes following total knee arthroplasty: a randomized, double-blind, placebo-controlled trial.
 \$10,000
 Principal Investigator: Joseph Kay
Co-investigator
- 2007 C.S. WRIGHT AWARD: Optimizing Functional Outcome following Hip and Knee Arthroplasty
 \$2,000
Principal Investigator
- 2006-2007 Canadian Anesthesiologists' Society: A randomized Controlled Study Comparing Dual Endpoint Nerve Stimulation with Ultrasound Guided Infraclavicular Block for Hand Surgery
 \$20,000
Principal Investigator
 Co-investigator: Vincent Chan
- 2006-2007 PSI FOUNDATION: A randomized Controlled Study Comparing Dual Endpoint Nerve Stimulation with Ultrasound Guided Infraclavicular Block for Hand Surgery
 \$16,500
Principal Investigator
 Co-investigator: Vincent Chan
- 2006-2008 American Society of Regional Anesthesia and Pain Medicine Carl Koller Award: Ultrasound detection of intraneural injection and nerve injury
 \$20,000

- Principal Investigator: Richard Brull
Co-investigator
- 2006 DEANS FUND, UNIVERSITY OF TORONTO: Nerve damage following ultrasound guided intraneuronal injection
\$10,000
Principal Investigator: Richard Brull
Co-investigator
- 2005 DEANS FUND, UNIVERSITY OF TORONTO: A randomized, controlled trial of ultrasound versus nerve stimulation for popliteal block.
\$10,000
Principal Investigator: Anahi Perlas
Co-investigator
- 2003-2004 PSI FOUNDATION: Improving Safety and Accuracy of Nerve Localization: A comparison of ultrasound imaging versus nerve stimulator for nerve localization for brachial plexus block.
\$75,000
Principal Investigator: Vincent Chan
Co-investigator
- 2003-2004 CANADIAN ANESTHESIOLOGISTS SOCIETY: Is ultrasound imaging a practical and more accurate method of nerve localization during brachial plexus block.
\$10,000
Principal Investigator: Vincent Chan
Co-investigator
- 2002-2003 PSI FOUNDATION: Regional anesthesia versus general anesthesia for ambulatory upper limb surgery.
\$45,000
Principal Investigator
Co-investigators: Vincent Chan, Brent Graham
- 2001-2004 ASRA Carl Koller award: Construct validity in teaching interscalene brachial plexus block.
\$25,000
Principal Investigator: Vincent Chan
Co-investigator

NON-PEER-REVIEWED GRANTS

- 2011-2013 Baxter Educational grant: Continuous peripheral nerve blocks for major orthopedic surgery.
Applicants: Colin J.L. McCartney and Martin van der Vyver
\$39,600

- 2007-2009 Stryker Medical: Effect of Ambulatory Continuous Femoral Nerve Blocks on Readiness-for-Discharge Following Total Knee Arthroplasty: A Multicenter, Randomized, Triple-Masked, Placebo-Controlled Investigation
\$2,000
Principal Investigator: Brian Ilfeld, University of California, San Diego
Site lead and Co-investigator
- 2003 Abbott Laboratories, Ltd: A Double-blind, Parallel, Randomized, Phase IIIb, Comparative Study of the Efficacy and Safety of Levobupivacaine Infusion For Continuous Femoral Nerve Block For Pain Relief Following Total Knee Replacement Surgery
\$60,000
Co-Investigator
- 2003 Delex Therapeutics: A Phase II, Two-Center, Open-Label, Safety And Pharmacodynamic Study Evaluating A Dose-To-Effect Of Inhaled Aerolef (Liposome- Encapsulated Fentanyl 500 µG/mL) In The Treatment Of Acute, Post-Operative Pain In Adult Patients Undergoing Elective Arthroscopic Anterior Cruciate Ligament (ACL) Surgery Reconstruction.
\$50,206.45
Co-Investigator
- 2003 Pharmacia Corporation: Double-Blind Multicenter Study of the Safety and Efficacy of Parecoxib Followed by Valdecoxib Compared to Placebo in General Surgery Patients for Treatment of Post-Surgical Pain.
\$30,600
Co-Investigator
- 2003 Pharmacia Corporation: Multiple dose, randomized, double blind, multicenter study of the analgesic efficacy of the dosing regimen of Parecoxib sodium compared to placebo in patients for the treatment of post surgical pain from orthopedic surgery.
\$11,250
Co-investigator

D. PUBLICATIONS

1. MOST SIGNIFICANT PUBLICATIONS

The emphasis in my scholarly work has been to investigate methods to improve efficacy and reduce complications of the common methods that we use for pain control after major surgery. Although we are currently completing and have several ongoing studies examining pain and function after joint replacement surgery my most significant publications in the past relate to the benefit that ultrasound-guided regional anesthesia techniques can provide to patients. Regional anesthesia techniques provide significant pain relief benefits to patients and in competent hands reduce complications such as post-operative nausea and vomiting and facilitate discharge after surgery. However prior to use of ultrasound success was only around 80% even in the most competent hands and occasional severe complications

occurred. I have led many studies to evaluate the benefits of ultrasound guidance with the five most significant publications listed below. I am currently completing a PhD by publication at the University of Edinburgh based on the studies I have performed using ultrasound guidance. I aim to defend my thesis by July 2014.

1. Chan VW, Perlas A, **McCartney CJ**, Brull R, Xu D, Abbas S. Ultrasound guidance improves success rate of axillary brachial plexus block. *Can J Anaesth.* 2007; 54: 176-82. Citation count: Google Scholar=239; Web of Science=94. **Co-PA**

This is the largest randomized study demonstrating the benefit of an ultrasound-guided technique on efficacy and adverse effects of an axillary brachial plexus block and significantly added to the emerging body of evidence demonstrating the benefits of ultrasound-guided techniques.

2. Brull R, Lupu M, Perlas A, Chan VWS, **McCartney CJL**. Compared with dual nerve stimulation, ultrasound guidance shortens the time for infraclavicular block performance. *Can J Anesth* 2009; 56: 812-8. Citation Count: Google Scholar=24; Web of Science=7. **SRA**

This is a high quality randomized study examining differences between ultrasound and nerve stimulation guidance for a common upper limb regional anesthesia technique. Although block effectiveness was similarly successful in both groups this study demonstrated a significant reduction in time to perform the technique with ultrasound.

3. Riazi S, Carmichael N, Awad I, Holtby RM, **McCartney CJ**. Effect of local anaesthetic volume (20 vs 5 ml) on the efficacy and respiratory consequences of ultrasound-guided interscalene brachial plexus block. *Br J Anaesth.* 2008; 101: 549-56. Citation Count: Google Scholar=134; Web of Science=58. **SRA**

This was one of the first studies to demonstrate that the use of a targeted low dose of local anesthetic for interscalene brachial plexus block using ultrasound guidance can produce effective pain relief whilst significantly reducing respiratory side effects of this block. This study has been cited 103 times (Google scholar) since publication and has instigated the further study of low volume techniques in many centres.

4. McNaught A, Shastri U, Carmichael N, Awad IT, Columb M, Cheung J, Holtby RM, **McCartney CJ**. Ultrasound reduces the minimum effective local anaesthetic volume compared with peripheral nerve stimulation for interscalene block. *Br J Anaesth.* 2011; 106: 124-30. Citation Count: Google Scholar=50; Web of Science=18. **SRA**

This was a follow on study to the study by Riazi et al and used the Dixon and Massey Up Down method to demonstrate that very low volumes (<1ml) of ropivacaine 0.5% could be used to perform effective analgesic block of the interscalene brachial plexus with ultrasound. These are highly surprising results and add to a small number of other studies in the literature demonstrating effective block of peripheral nerves using very low volumes of local anesthetic. Together these results may well increase safety of our peripheral nerve block techniques by encouraging use of more appropriate smaller volumes of local anesthetics.

5. Brull R, **McCartney CJ**, Chan VW, El-Beheiry H. Neurological complications after regional anesthesia: contemporary estimates of risk. *Anesth Analg.* 2007; 104: 965-74. Citation Count: Google Scholar=267; Web of Science=112. **Co-PA**

Whilst regional anesthesia provides many benefits for patients the risk of neurological injury is a barrier to their use in many institutions. This review demonstrated that the risk of both temporary and permanent peripheral nerve injury after peripheral nerve block remains very low and is one of the first papers to systematically review the literature for evidence of neurological complications after regional anesthesia.

2. PEER-REVIEWED PUBLICATIONS

1. McIsaac DI, Cole E, **McCartney CJ**. Impact of including regional anaesthesia in enhanced recovery pathways: a scoping review. *Br J Anaesth*. In press.
2. Chenkin J, **McCartney CJ**, Tomislav J, Romano M, Heslop C, Bandiera G. Defining the learning curve of point-of-care ultrasound for confirming endotracheal tube placement by emergency physicians. *Critical Ultrasound Journal*. In press.
3. Clarke H, Page G, **McCartney CJ**, Huang A, Stratford P, Andrion J, Kennedy D, Awad IT, Gollish J, Kay J, Katz J. Pregabalin reduces postoperative opioid consumption and pain for 1 week post hospital discharge, but not function at 6 weeks or 3 months after total hip arthroplasty. *Br J Anaesth*. In press.
4. Neal J, Brull R, Horn JL, Liu SS, **McCartney CJ**, Perlas A, Salinas F, Tsui B. The second ASRA Evidence-Based Assessment of Ultrasound-Guided Regional Anesthesia. Executive Summary of the 2015 Update. *Reg Anesth Pain Med* 2015. In press.
5. **McCartney CJ**. So...why do you want to become an anesthesiologist? *Can J Anesth* 2015; Jun 23.
6. Miller D, **McCartney CJ**. Mentoring during anesthesia residency training: challenges and opportunities. *Can J Anesth* 2015; Jun 23.
7. Turbitt L, Choi S, **McCartney CJ**. Peripheral nerve blockade for total knee arthroplasty: An evidence-based review. *Curr Anesth Reports* 2015; e-pub ahead of print.
8. Turbitt L, Nelligan K, **McCartney CJ**. PECS block for breast cancer surgery: a methodological evaluation. *RAPM* 2015; 40: 388-9.
9. Dighe K, Clarke H, **McCartney CJ**, Wong CL. Perioperative Gabapentin and Delirium Following Total Knee Arthroplasty: A Post-Hoc Analysis of a Double-Blinded, Randomized, Placebo-Controlled Trial. *Canadian Journal of Anesthesia* 2014; 61: 1136-7.
10. **McCartney CJ**, Choi S. Evidence base for the use of ultrasound for brachial plexus block: 2014 update. *Reg Anesth Pain Med* 2014; epub ahead of print.
11. Clarke HA, Katz J, **McCartney CJ**, Stratford P, Kennedy D, Pagé MJ, Awad IT, Gollish J, Kay J. Perioperative gabapentin reduces 24 h opioid consumption and improves in-hospital rehabilitation but not post-discharge outcomes after total knee arthroplasty with peripheral nerve block. *Br J Anaesth*. 2014; 113: 855-64. Co-A.
12. Safa B, **McCartney CJ**, Haslam L, Gollish J. Comparing the postoperative functional recovery and analgesic efficacy of a single shot sciatic nerve block versus posterior capsule infiltration of local anesthetic for total knee arthroplasty. *Journal of Arthroplasty* 2013; 29: 1149-53. **Co-PA**

13. **McCartney CJ**, Nelligan K. Postoperative pain management after total knee arthroplasty in elderly patients: treatment options. *Drugs and Aging* 2014; 31: 83-91.
14. Webster, F., Katz J, Watt-Watson J, Bremner S, Kennedy D, **McCartney CJL**. Patient's perceptions of joint replacement care in a changing healthcare system: A qualitative study. *Healthcare Policy* 2014; 9: 55-66. **Co-PA**.
15. Choi S, Reitze R, **McCartney CJ**. The Effects of Dexamethasone as a Local Anaesthetic Adjuvant for Brachial Plexus Block: A Systematic review and Meta-analysis of Randomized Trials. *British Journal of Anaesthesia* 2014; 112: 427-39. **CA**
16. **McCartney CJ**, Choi S. Does anaesthetic technique really matter for total knee arthroplasty? *British Journal of Anaesthesia* 2013; 111: 331-333. Invited editorial. **SRA**
17. Lansdown A, McHardy P, Patel S, Nix CM, **McCartney CJ**. Survey of international regional anesthesia fellowship directors. *Local and Regional Anesthesia* 2013; 6: 17-24. **SRA**
18. Nix CM, Margarido C, Dubrowski A, Cheung JJ, Awad IT, Avila A, **McCartney CJ**. A scoping review of the evidence for teaching ultrasound-guided regional anesthesia. *Reg Anesth Pain Med* 2013; 38: 471-80. **SRA**
19. Choi S, Trang A, **McCartney CJ**. Functional outcomes after knee arthroplasty and regional anesthesia are suboptimally reported: a scoping review. *Reg Anesth Pain Med* 2013; 38: 340-9. **SRA**
20. Rosenbloom B, Khan S, **McCartney CJ**, Katz J. Systematic review of persistent pain and psychological outcomes following traumatic musculoskeletal injury. *Journal of Pain Research* 2013; 6: 39-51. **CA**
21. Conroy P, Luyet C, **McCartney CJ**, McHardy P. Real-time ultrasound guided spinal anesthesia: a feasibility study. *Anesthesiology Research and Practice* 2013; Epub Jan 10. **Co-PA**
22. Awad I, Cheung J, Al Allaq Y, Conroy P, **McCartney CJ**. Lower dose of isobaric bupivacaine for spinal anesthesia facilitates discharge from PACU and reduces morbidity in patients undergoing total knee arthroplasty: a randomized trial. *Canadian Journal of Anesthesia* 2013; 60: 259-65. **CA**
23. Liu SS, Buvanendran A, Rathmell JP, Sawhney M, Bae JJ, Moric M, Perros S, Pope AJ, Poultides L, Della Valle CJ, Shin NS, **McCartney CJ**, Ma Y, Shah M, Wood MJ, Manion SC, Sculco TP. Predictors for moderate to severe acute postoperative pain after total hip and knee replacement. *International Orthopedics*. 2012; 36: 2261-7. **CA**
24. Carmichael N, Katz J, Clarke H, Kennedy D , Kreder H, Gollish J, **McCartney CJ**. An intensive perioperative regimen of pregabalin and celecoxib reduces pain and improves physical function scores at 6 weeks following total hip arthroplasty: A prospective randomized controlled trial. *Pain Research and Management* 2013; 18: 127-32. **SRA**
25. Bremner S, **McCartney CJ**, Katz J, Watt-Watson J, Webster F. Older adults' postoperative pain medication usage after total knee arthroplasty: A qualitative descriptive study. *Journal of Opioid Management* 2012; 8: 145-52. **SRA**
26. Cheung JJ, Chen EW, Darani R, **McCartney CJ**, Dubrowski A, Awad IT. The Creation of an Objective Assessment Tool for Ultrasound-Guided Regional Anesthesia Using the Delphi Method. *Reg Anesth Pain Med*. 2012; 37: 329-33. **CA**

27. Liu SS, Buvanendran A, Rathmell JP, Sawhney M, Bae JJ, Moric M, Perros S, Pope AJ, Poultides L, Della Valle CJ, Shin NS, **McCartney CJ**, Ma Y, Shah M, Wood MJ, Manion SC, Sculco TP. A Cross-Sectional Survey on Prevalence and Risk Factors for Persistent Postsurgical Pain 1 Year After Total Hip and Knee Replacement. *Reg Anesth Pain Med.* 2012; 37: 415-22. **CA**
28. **McCartney CJL**, Patel S. Local anesthetic volume: How low can (or should) we go? *Reg Anesth Pain Med* 2012; 37: 239-41. Invited Editorial. **PA**
29. McGillion M, Dubrowski A, Stremler R, Watt-Watson J, Campbell F, **McCartney C**, Victor C, Wiseman J, Snell L, Costello J, Robb A, Nelson S, Stinson J, Hunter J, Dao T, Promislow S, McNaughton N, White S, Shobbrook C, Jeffs L, Mauch K, Leegaard M, Beattie WS, Schreiber M, Silver I. The Postoperative Pain Assessment Skills pilot trial. *Pain Res Manag* 2011; 16: 433-9. **CA**
30. **McCartney CJ**, McLeod GA. Local Infiltration Analgesia. *Br J Anaesth* 2011; 107: 487-9. Editorial. **PA**
31. Webster, F., Katz J, Watt-Watson J, Bremner S, Kennedy D, **McCartney CJL**. Patient experiences as knowledge for the evidence base: understanding the importance of lay understandings to clinical decision-making. *Reg Anesth Pain Med* 2011; 36: 461-5. **Co-PA**
32. Luyet C, Boudah R, **McCartney CJ**, Zeldin R, Rizoli S. Low-Frequency Jet Ventilation Through a Bronchial Blocker for Tracheal Repair After a Rare Complication of Percutaneous Dilatational Tracheostomy. *Journal of Cardiothoracic and Vascular Anesthesiology* 2011. Epub ahead of print. **CA**
33. Regional Anesthesiology and Acute Pain Medicine Fellowship Directors Group. Guidelines for fellowship training in Regional Anesthesiology and Acute Pain Medicine: Second Edition, 2010. *Reg Anesth Pain Med* 2011; 36: 282-8. **CA**
34. Cheung JJ, Chen EW, Al-Allaq Y, Nikravan N, **McCartney CJ**, Dubrowski A, Awad IT. Acquisition of technical skills in ultrasound-guided regional anesthesia using a high-fidelity simulator. *Stud Health Technol Inform.* 2011; 163: 119-24. **CA**
35. Awad IT, Sinclair C, Chen EW, **McCartney CJ**, Cheung JJ, Dubrowski A. Anesthesia Residents' Preference for Learning Interscalene Brachial Plexus Block (ISBPB): Traditional Winnie's Technique vs. Ultrasound-Guided Technique. *Stud Health Technol Inform.* 2011; 163: 36-8. **CA**
36. McNaught A, Shastri U, Carmichael N, Awad IT, Columb M, Cheung J, Holtby RM, **McCartney CJ**. Ultrasound reduces the minimum effective local anaesthetic volume compared with peripheral nerve stimulation for interscalene block. *Br J Anaesth.* 2011; 106: 124-30. **SRA** (Google Scholar: 26 citations since publication)
37. Anns J, Chen EW, Nikravan N, **McCartney CJL**, Awad IT. A Comparison of Sartorius Versus Quadriceps Stimulation for Femoral Nerve Block: A Prospective Randomized Double-Blind Controlled Trial. *Anesthesia & Analgesia* 2011; 112: 725-31. **CA**
38. **McCartney CJL**, Lin L, Shastri U. Evidence basis for the use of ultrasound for upper-extremity blocks. *Reg Anesth Pain Med.* 2010; 35: S10-5. **PA**

39. Neal JM, Brull R, Chan VW, Grant SA, Horn JL, Liu SS, **McCartney CJL**, Narouze SN, Perlas A, Salinas FV, Sites BD, Tsui BC. The ASRA evidence-based medicine assessment of ultrasound-guided regional anesthesia and pain medicine: Executive summary. *Reg Anesth Pain Med*. 2010; 35 (2 Suppl): S1-9. **Co-PA**
40. **McCartney CJL**, Dickinson V, Riazi S, McHardy P, Awad I, Dubrowski A. Ultrasound provides a reliable test of local anaesthetic spread. *Reg Anesth Pain Med* 2010; 35: 361-3. **PA**
41. Brull R, Lupu M, Perlas A, Chan VWS, **McCartney CJL**. Compared with dual nerve stimulation, ultrasound guidance shortens the time for infraclavicular block performance. *Can J Anesth* 2009; 56: 812-8. **SRA**
42. Neal JM, Gerancher JC, Hebl JR, Ilfeld BM, **McCartney CJ**, Franco CD, Hogan Q. Upper Extremity Regional Anesthesia: Essentials of Our Current Understanding, 2008. *Reg Anesth Pain Med* 2009; 34: 134-70. **Co-PA**
43. Mandelcorn E, **McCartney CJ**, Mandelcorn M. A Controlled Clinical Interventional Trial Comparing 2% Chloroprocaine/Bupivacaine Versus 2% Lidocaine/Bupivacaine for Retrobulbar Anesthesia in Scleral Buckling Surgery. *Can J Ophthalmol* 2009; 44: 83-7. **PA**
44. Riazi S, Carmichael N, Awad I, Holtby R, **McCartney CJ**. Effect of local anaesthetic volume (20 vs 5ml) on the efficacy and respiratory consequences of ultrasound-guided interscalene brachial plexus block. *Br J Anaesth* 2008; 101: 549-56. **SRA**
45. Lo N, Brull R, Perlas A, Chan VWS, **McCartney CJL**, Sacco R, El-Beheiry H. Evolution of Ultrasound Guided Axillary Brachial Plexus Blockade: Retrospective Analysis of 662 Blocks. *Can J Anesth* 2008; 55: 408-13. **CA**
46. Silverman GL, **McCartney CJL**. Regional Anesthesia for the Management of Limb Injuries in Space. *Aviat Space Environ Med* 2008; 79: 620-625. **SRA**
47. Perlas A, Brull R, Chan VW, **McCartney CJ**, Nuica A, Abbas S. Ultrasound guidance improves the success of sciatic nerve block at the popliteal fossa. *Reg Anesth Pain Med* 2008; 33: 259-65. **CA**
48. Masursky D, Dexter F, **McCartney CJ**, Isaacson SA, Nussmeier NA. Predicting Orthopedic Surgeons' Preferences for Peripheral Nerve Blocks for Their Patients. *Anesth Analg* 2008; 106: 561-7. **Co-PA**
49. Chan VW, Perlas A, **McCartney CJL**, Brull R, Xu D, Abbas S. Ultrasound guidance improves success rate of axillary brachial plexus block. *Can J Anesth* 2007; 54: 176-82. **Co-PA**
50. **McCartney CJL**, Duggan E, Apatu E. Should we add clonidine to local anesthetic for peripheral nerve blockade? A qualitative systematic review of the literature. *Reg Anesth Pain Med* 2007; 32: 330-8. **SRA**
51. van Geffen GJ, **McCartney CJ**, Gielen M, Chan VW. Ultrasound as the only nerve localization technique for peripheral nerve block. *J Clin Anesth*. 2007; 19: 381-5. **CA**
52. **McCartney CJL**, Xu D, Constantinescu C, Abbas S, Chan VW. Ultrasound Examination of Peripheral Nerves in the Forearm. *Reg Anesth Pain Med* 2007; 32: 434-9. **PA**

53. Assman N, **McCartney CJL**, Tumber PS, Chan VWS. Ultrasound guidance for brachial plexus localization and catheter insertion after complete forearm amputation. *Reg Anesth Pain Med* 2007; 32: 93. **SRA**
54. Brull R, **McCartney CJL**, Chan VWS, Liguori G, Hargett M, Xu D, Abbas S, El-Beheiry H. Disclosure of risks associated with regional anesthesia: a survey of academic regional anesthesiologists. *Reg Anesth Pain Med* 2007; 32: 7-11. **Co-PA**
55. Chan VWS, Brull R, **McCartney CJL**, Xu D, Abbas S, Shannon P. An Ultrasonographic and Histological Study of Intraneural Injection and Electrical Stimulation in Pigs. *Anesth Analg* 2007; 104:1281-1284. **CA**
56. Brull R, **McCartney CJ**, Chan VW, El-Beheiry H. Neurological complications after regional anesthesia: contemporary estimates of risk. *Anesth Analg* 2007; 104: 965-974. **Co-PA**
57. Perlas A, Niazi A, **McCartney CJL**, Chan VW, Xu D, Abbas S. The sensitivity of motor response to nerve stimulation and paresthesia for nerve localization as evaluated by ultrasound. *Reg Anesth Pain Med* 2006; 31: 445-50. **Co-PA**
58. Chan VWS, Nova HA, Abbas S, **McCartney CJL**, Perlas A, Xu D. Ultrasound examination and localization of the sciatic nerve: a volunteer study. *Anesthesiology* 2006; 104: 309-14. **CA**
59. Brull R, **McCartney CJL**, Chan VWS, Abbas S, Nova H, von Schroeder H, Katz J. Effect of transarterial block versus general anesthesia on paraesthesiae 1 year after hand surgery. *Anesthesiology* 2005; 103: 1104-5. **SRA**
60. Gerancher JC, Viscusi ER, Liguori GA, **McCartney CJ**, Williams BA, Ilfeld BM, Grant SA, Hebl JR, Hadzic A. Development of a standardized peripheral nerve block procedure note form. *Reg Anesth Pain Med*. 2005; 30: 67-71. **CA**
61. Porter J, **McCartney CJ**, Chan VW. Needle placement and injection posterior to the axillary artery may predict successful infraclavicular brachial plexus block: a report of three cases. *Can J Anesth* 2005; 52: 69-73. **SRA**
62. Brill S, **McCartney CJ**, Sawyer RJ, Chan VW. Intra-articular ketamine-a dose finding study. *The Pain Clinic* 2005; 17: 25-30. **CA**
63. Peng P, Rudich Z, Dunn E, **McCartney C**. Stability of clonidine in clonidine-hydromorphone mixture from implanted intrathecal infusion pumps in chronic pain patients. *J Pain Symptom Manage* 2004; 28: 599-602. **Co-PA**
64. Katz J, Schmid R, Snijdelaar DG, Coderre TJ, **McCartney CJ**, Wowk A. Pre-emptive analgesia using intravenous fentanyl plus low-dose ketamine for radical prostatectomy under general anesthesia does not result in short-term or long-term reductions in pain or analgesic use. *Pain* 2004; 110, 707-18. **CA**
65. **McCartney CJL**, Brauner I, Chan VW. Ultrasound Guidance for Lateral Approach to the Sciatic Nerve in the Popliteal Fossa. *Anaesthesia*. 2004; 59:1023-5. **SRA**

66. Stinson J, **McCartney CJ**, Leung A, Katz J. Impact of attending a health care conference in Toronto during the severe acute respiratory syndrome crisis: survey of delegates. *Pain Res Manage* 2004; 9: 137-43. **SRA**
67. Brull R, Sawyer RJ, Von Schroeder HP, **McCartney CJL**. The indications and application of interscalene brachial plexus block for surgery about the shoulder. *Acute Pain* 2004; 6: 57-77. **SRA**
68. **McCartney CJL**, Brull R, Chan VW; Katz J, Abbas S, Graham B, Nova H, Rawson R, Anastakis D, von Schroeder H. Early but no long-term benefit of regional compared with general anesthesia for ambulatory hand surgery. *Anesthesiology* 2004; 101: 461-7. **SRA**
69. Oldman M, **McCartney CJL**, Leung A, Rawson R, Perlas A, Gadsden J, Chan VWS. A survey of orthopedic surgeons attitudes and knowledge regarding regional anesthesia. *Anesth Analg* 2004; 98: 1486-90. **SRA**
70. Brull R, **McCartney CJL**, Chan VWS, Chung F, Rawson R. Are Patients Comfortable Consenting to Clinical Anesthesia Research Trials on the Day of Surgery? *Anesth Analg* 2004; 98: 1106-10. **SRA**
71. **McCartney CJL**, Sinha A, Katz J. A Qualitative Systematic Review of the Role of N-methyl D-aspartate antagonists in Preventive Analgesia. *Anesth Analg* 2004; 98: 1385-400. **SRA**
72. Brill S, **McCartney CJL**, Weksler N, Chan VWS. Acute colonic pseudo-obstruction (Ogilvie's syndrome), lower limb arthroplasty and opioids. *Acute Pain* 2003; 5: 45-50. **Co-PA**
73. **McCartney CJL**, Brill S, Rawson R, Sanandaji K, Iagounova A, Chan VWS. No anesthetic or analgesic benefit of neostigmine 1mg added to intravenous regional anesthesia with lidocaine 0.5% for hand surgery. *Reg Anesth Pain Med* 2003; 28: 414-7. **SRA**
74. **McCartney CJL**, Murphy DB, Iagounova A, Chan VWS. Intravenous Ropivacaine Bolus is a Reliable Marker of Intravascular Injection in Premedicated Healthy Volunteers. *Can J Anesth* 2003; 80: 795-800. **PA**
75. **McCartney CJL**. A response to 'Convulsions following axillary brachial plexus blockade with levobupivacaine', Pirodda D, Sprigge J, *Anaesthesia* 2002; 57: 1187-9. *Anaesthesia* 2003; 58: 404-5. **SRA**
76. Ganapathy S, **McCartney CJL**, Beattie WS, Chan VWS. Best evidence in anesthetic practice: prevention: epidural anesthesia and analgesia does not reduce 30-day all cause mortality and major morbidity after abdominal surgery. *Can J Anesth* 2003; 50: 143-6. **PA**
77. Peng PWH, Coleman MM, **McCartney CJL**, Krone S, Chan VWS, Kaszas S, Vucemilo I. Comparison of anesthetic effect between 0.375% ropivacaine vs 0.5% lidocaine in forearm intravenous regional anesthesia. *Reg Anesth Pain Med* 2002; 27: 595-9. **CA**
78. Brull R, **McCartney CJL**, Chan VWS. Do Preoperative Anxiety and Depression Affect Quality of Recovery and Length of Stay After Hip or Knee Arthroplasty? *Can J Anesth* 2002; 49: 109. **SRA**
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80. Choyce A, Chan VW, Middleton WJ, Knight P, Peng P, **McCartney CJL**. What is the relationship between paresthesia and nerve stimulation for axillary brachial plexus block? *Reg Anesth Pain Med*. 2001; 26: 100-4. **Co-PA**
81. **McCartney CJL**, Johnston G. Anaesthetic management of a six-week old child with unilateral pulmonary interstitial emphysema. *Paediatr Anaesth* 2000; 10: 325-328. **PA**
82. **McCartney CJL**, Herriot R, Chambers WA. Bilateral hand oedema following acupuncture. *Pain* 2000; 84: 429-30. **PA**
83. Murphy D, **McCartney CJL**, Chan VWS. Novel Analgesic Adjuncts for Brachial Plexus Block-A Systematic Review. *Anesth Analg* 2000; 90(5): 1122-8. **Co-PA**
84. **McCartney CJL**. Pain and Disability following Lower Limb Amputation. *Annals of the Scottish Society of Anaesthetists* 1999; 39: 10-14. **PA**
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86. **McCartney CJL**, Dark A. Caesarean delivery during cardiac arrest in late pregnancy-a successful outcome. *Anaesthesia* 1998; 53(3): 310-311. **SRA**
87. **McCartney CJL**, MacLennan F. Do the risks of combined spinal-epidural analgesia in labour outweigh the benefits? *Anaesthesia* 1998; 53: 717-718. **PA**
88. **McCartney CJL**, Chambers WA. Pre-operative analgesic...what is wrong with the oral route? *Anaesthesia* 1998; 53(6): 607-608. **PA**

Correspondence

89. Lansdown A, **McCartney CJ**, Constantinescu C, Patel S. Regarding "A prospective analysis of interscalene brachial plexus block performed under general anesthesia". *J Shoulder Elbow Arth* 2012; e-pub ahead of press. **SRA**
90. **McCartney CJ**, McNaught A, Shastri U, Columb M. Reply from the authors. *Br J Anaesth* 2011; 107: 103-4. **PA**
91. **McCartney CJ**, McNaught A, Shastri U, Columb M. Reply from the authors. *Br J Anaesth*. 2011; 106: 601-2. **PA**
92. Choi S, **McCartney CJL**, Van der Vyver M. Femoral Nerve Block Does Provide Significant Analgesia After Anterior Cruciate Ligament Reconstruction. *Journal of Arthroscopy* 2010; 26: 1416. **SRA**
93. **McCartney CJL**, Brull R, Perlas A, Chan VW. Reply to Dr. Aguirre. *Can J Anesth* 2010; 57: 176-178. **PA**
94. McNaught A, **McCartney CJL**. Bupivacaine chondrotoxicity. *Br J Anaesth* 2009; 103: 133-4. **SRA**

95. **McCartney CJL**. Ultrasound guidance for regional anaesthesia. Br J Anaesth 2007; 99: 139-142. **PA**
96. Eipe N, **McCartney CJ**, Kummer C. Transient Neurological Dysfunction after Continuous Femoral Nerve Block: should this change our practice? Anesthesiology 2007; 107: 177-8. **SRA**
97. Brull R, Chan VWS, **McCartney CJL**, Perlas A, Xu D. Ultrasound detects intraneural injection. Anesthesiology 2007; 106: 1244. **CA**
98. **McCartney CJL**, Levine MF. Training Intensity and Consultant Support: The Canadian Experience. Br J Anaesth 2006; 96: 540-1. **PA**
99. **McCartney CJL**, Brull R, Chan VW, Chung F. Response to letter. Anesth Analg 2004; 99: 1272. **SRA**
100. **McCartney CJL**. We need to educate about perioperative pain control and not just regional anesthesia. Reg Anesth Pain Med 2004; 29: 382. **SRA**
101. Brull R, **McCartney CJL**, Chan VWS. A novel approach to infraclavicular brachial plexus block: the ultrasound experience. Anesth Analg 2004; 99; 950. **SRA**
102. Knight P, Choyce A, **McCartney CJL**. Anesthesia Clinics: The Canadian Experience. Anaesthesia 2001; 56: 85. **SRA**

3. NON-PEER-REVIEWED PUBLICATIONS:

1. McCartney CJ, Nelligan K. ASRA News November 2014
2. **McCartney CJ**, Nelligan K. Carl Koller Memorial Research Grant: Funding High Quality Research in Regional Anesthesia and Pain Medicine for over 25 years. ASRA Newsletter August 2012. **SRA**
3. **McCartney CJ**. Editorial. ASRA Newsletter February 2012. **SRA**
4. **McCartney CJ**. ASRA-going International. ASRA Newsletter August 2011. **SRA**
5. **McCartney CJ**. Editorial. ASRA newsletter August 2010. **SRA**
6. Afsari M, **McCartney CJ**. Perineural catheter techniques. Int Anesthesiol Clin 2011; 48: 71-84. **SRA**
7. **McCartney CJ**. Editorial. ASRA Newsletter August 2010. **SRA**
8. **McCartney CJ**. Editorial. The Wheel of Life Forever Turning. ASRA Newsletter May 2010. **SRA**
9. **McCartney CJ**. Editorial. What is mentoring? ASRA Newsletter February 2010. **SRA**
10. **McCartney CJ**. Editorial. The Value of Regional Anesthesia-Surely a quick GA would be easier? ASRA Newsletter November 2009. **SRA**
11. **McCartney CJ**, Kopp S. Editorial: ASRA's role in the future of resident and fellow education. ASRA newsletter August 2009. **SRA**

12. **McCartney CJ**, Nicholls B. Use of ultrasound for interventional pain management. Newsletter of the British Pain Society, August 2009. **Co-PA**
13. **McCartney C**. Editorial. ASRA Newsletter May 2009. **SRA**
14. Marhofer P, Weller R, **McCartney CJL** et al. Zuers Ultrasound Experts Regional Anesthesia Statement. European Society of Anaesthesiologists' Newsletter 2007. **CA**
15. **McCartney CJL**. Op:Ed: Certification in Regional Anesthesia: Opportunity or Threat? ASRA News. 2007; May edition. **SRA**
16. **McCartney CJL**. Con: "Teaching Residents with Ultrasound Hinders Post-Graduate Practice of Regional Anesthesia" ASRA News. 2007; May edition. **SRA**
17. **McCartney CJL**. How I do it: Ultrasound-guided infraclavicular block. ASRA news 2004; August. **SRA**
18. **McCartney CJL**. How to manage your pain after surgery. A patient's guide to medical information 2004. **SRA**
19. **McCartney CJL**. Acute Pain Control after Surgery: Basic Right or Unnecessary Luxury? Parkhurst Exchange 2004; 12: 74-79. **SRA**
20. **McCartney CJL**, Gardner-Nix J, Stinson J. Round table discussion on chronic pain. Parkhurst Exchange 2004;12:126-131. **Co-PA**
21. Katz J, **McCartney CJL**. Current status of pre-emptive analgesia. Current Opinion in Anesthesiology 2002; 15: 435-41. **Co-PA**
22. **McCartney CJL**, McGuire G. Do Not Resuscitate. BMJ 2001; 323, 58. **SRA**
23. Sawyer RJ, **McCartney CJL**. Anaesthetic Management of the Patient with Advanced Malignancy. Current Anaesthesia and Critical Care 2001; 12: 302-308. **SRA**
24. **McCartney CJL**, Chambers WA. Central Neuraxial Techniques for Cancer Pain. Current Anaesthesia and Critical Care 2000; 11: 166-92. **PA**
25. **McCartney CJL**. Holistic care is vital and takes time. eBMJ 15th December 1998. **SRA**
26. **McCartney CJL**, Chambers WA. Coeliac Plexus Block. Current Anaesthesia and Critical Care 1998; 9(6): 318-324. **PA**
27. **McCartney CJL**. A memorable viva. BMJ 1997; 314: 1723. **SRA**

4. PUBLICATIONS IN PREPARATION:

1. The short and long term effects of perioperative pregabalin use on functional rehabilitation, pain outcomes and anxiety following total hip arthroplasty: A randomized, double-blind, placebo-controlled trial. **Co-A. Submitted to BJA.**
2. Using a Participatory Approach to Develop an Evaluation Framework for a Competency Based Medical Education Residency Program. Co-A. Moreau, Katherine A.; Eady, Kaylee; McCartney, Colin J.L.; Chaput, Alan J. Submitted to Medical Teacher.
3. Rosenbloom BR, Katz J, Chin K, Haslam L, Canzian S, Kreder H, **McCartney CJ.** Predicting pain outcomes after traumatic musculoskeletal injury. Submitted to Pain.

5. Studies in Progress:

1. OPRA: Optimizing Pain and Rehabilitation after Total Knee Arthroplasty (PI) Recruited 30/120 (funded:PSI) NCT01616836: completed
2. METS: Measurement of Exercise Tolerance after Surgery (Multicentre-Site PI) Recruited 30/200 (funded: CIHR, HSFC)
4. Determining the Minimal Effective Volume (MEAV 95) for Interscalene Brachial Plexus Block for Surgical Anesthesia (PI) Recruited 20/60 (funded PSI) NCT01703130

Book Chapters:

1. **McCartney CJ**, Choi S. Complications of brachial plexus blocks. In: Tsui B, Finucane B. Complications of Regional Anesthesia. 3rd edition. In press.
2. **McCartney CJ**, Awad I, Singh M. US guided lower limb blocks. In: Narouse S. Atlas of ultrasound-guided pain management procedures. Springer 2014. 2nd edition. In press. **SRA**
3. **McCartney CJ**, Choi S. Use of Analgesic Adjuvants in the Peripheral Nervous System. In: Hadzic A. Regional Anesthesia: Principles and Practice. 2nd edition. McGraw Hill 2013. In press. **SRA**
4. **McCartney CJ**, MacFarlane A. Regional anaesthesia of the upper limb. In: Hopkins et al. Oxford Textbook of Clinical Anaesthesia. Oxford University Press 2012. In manuscript. **SRA**
5. Choi S, **McCartney CJ.** Anesthesia for hallux valgus repair. In: Mulroy et al. Clinical Decision Making in Anesthesia. Decision Support in Medicine, LLC 2011. **SRA**
6. **McCartney CJ**, Mahon P. Lower limb blocks. In: Benzon H. Spinal injections and peripheral nerve blocks. Elsevier 2010. **SRA**
7. **McCartney CJ.** Chronic pain after surgery. In: Benzon H, Liu SS. Essentials of Pain Medicine. 3rd Ed. Elsevier 2010. **SRA**
8. **McCartney CJ**, Awad I, Mulchandani H. US guided lower limb blocks. In: Narouse S. Atlas of

- ultrasound-guided pain management procedures. Springer 2010. **SRA**
9. **McCartney CJ**. Lower limb blocks. In: McLeod GA, **McCartney CJL**, Wildsmith JAW. Principles and practice of regional anaesthesia. 4th edition. Oxford University Press 2011. **SRA**
 10. **McCartney CJ**. Direct complications of regional techniques. In: McLeod GA, **McCartney CJL**, Wildsmith JAW. Principles and practice of regional anaesthesia. 4th edition. Oxford University Press 2011. **SRA**
 11. Katz J, **McCartney CJL**, Rashiq S. Why does acute pain become chronic? In: Rashiq S, Schopflocher D, Taenzer P. Chronic Pain: A Health Policy Perspective. 1st Edition. 2008. **CA**
 12. **McCartney CJL**. Foreword to Text. Ultrasound in Regional Anesthesia and Pain Management. Harmon D et al. Elsevier 2008. **SRA**
 13. Sawyer J, **McCartney CJ**. Acute pain management. In Devito I. Anesthesia for Medical Students. 1st edition. **SRA**
 14. Soares LG, **McCartney CJL**. Ultrasound-Guided Posterior Tibial Block. In Chelly J. Peripheral Nerve Blocks: A Color Atlas. 3rd Edition. LWW 2008. **SRA**
 15. **McCartney CJL**, Lo N. Ultrasound-Guided Popliteal Block. In Chelly J. Peripheral Nerve Blocks: A Color Atlas. 3rd Edition. LWW 2008. **SRA**
 16. **McCartney CJL**, Niazi A. Use of opioids in the perioperative period. In Shorten G, Brown J, Carr D, Puig M, Harmon D. Postoperative pain management – a clinician’s guide to evidence based practice. Elsevier 2006. **SRA**
 17. **McCartney CJL**. Use of Analgesic Adjuvants in the Peripheral Nervous System. In: Hadzic A. Regional Anesthesia: Principles and Practice. McGraw Hill 2006. **SRA**
 18. **McCartney CJL**, Chan VWS. Training and education of a physician for regional anesthesia. In: Raj P. Textbook of Regional Anesthesia. W.B. Saunders 2002. **PA**

Textbooks

McLeod GA, **McCartney CJ**, Wildsmith JA. Principles and Practice of Regional Anaesthesia 4th Edition. Oxford University Press 2013. (Winner of British Medical Association Medical Book Award 2013 for Anaesthesia category).

F. ABSTRACTS, PRESENTATIONS AND INVITED LECTURES

1. Abstracts and Papers presented or co-presented at meetings and symposia (since 1997): (presenter noted if other than CJLM)

1. Does LIA provide effective analgesia after TKA: A systematic review and meta-analysis. American Society of Regional Anesthesia and Pain Medicine. Las Vegas, USA. May 2015. Presenter: Kathleen Nelligan
2. Does LIA provide effective analgesia after TKA: A systematic review and meta-analysis. Canadian Anesthesiologists Society, Ottawa, June 2015. Presenter: Mandeep Singh.
3. A Comparison of the efficacy of Ultrasound-Guided versus Ultrasound and Evoked Motor Response-Guided Placement of Continuous Femoral Nerve Blockade. Presented by Ewen Chen at Shields Day, Toronto, ON. May 2015.
4. Neuropathic pain and the use of alpha-2-delta ligands in adults following traumatic musculoskeletal injury. American Society of Regional Anesthesia and Pain Medicine (ASRA). Chicago, USA. (April 3-6, 2014). Presenter: Brittany Rosenbloom.
5. Perioperative Gabapentin reduces 24 hour opioid consumption and improves in-hospital rehabilitation but not post-discharge outcomes following total knee arthroplasty. To be presented at the Canadian Pain Society, Quebec City 2014. Presenter: Hance Clarke
6. Pregabalin reduces 24h opioid consumption and improves daily pain for 1 week after discharge but not function at 6 weeks, 3 or 6 months following total hip arthroplasty. To be presented at the Canadian Pain Society, Quebec City 2014. Presenter: Hance Clarke
7. Optical coherence tomography for neural imaging. Presented at American Society of Regional Anesthesia and Pain Medicine, Chicago, IL. April 2014. Presenter: Colin McCartney
8. Incidence of persistent pain and opioid use following traumatic musculoskeletal injury: a pilot study. Presented at European Society of Regional Anesthesia, Glasgow, Scotland, September 2013.
9. Chronic Pain in the Obstetric population: A Systematic Review. Poster presentation at SOAP. May 2013. Presenter Ehtesham Baig.
10. Pain, anxiety and depression following traumatic musculoskeletal injury, Poster presentation ASRA. May 2013. Presenter: Brittany Rosenbloom
11. Ultrasound Guided Regional Anesthesia (UGRA): The Evidence base – A Scoping Review. Presented at ASRA, Boston, MA May 2013. Presenter: Catherine Nix
12. Can ultrasound guidance reduce the dose of local anesthetics for successful interscalene brachial plexus block: a systematic review, Poster presentation ASRA. May 2013. Presenter: Jane Wang
13. Ultrasound Guided Regional Anesthesia (UGRA): The Evidence base – A Scoping Review. Presented at Department of Anaesthesia Faculty Development Day, Toronto, ON November 2012. Presenter:

Catherine Nix (Winner of Best Poster Presentation)

14. Introduction of point of care ultrasound (PoCUS) training during the 3rd year undergraduate University of Toronto anaesthesia simulation day. Presented at Department of Anaesthesia Faculty Development Day, Toronto, ON. November 2012. Presenter: Corina Constantinescu.
15. Predictors for moderate to severe acute postoperative pain after total hip and knee replacement. Presented at American Society of Anesthesiology, Washington, DC. October, 2012. Presenter: James Bae.
16. Systematic review of persistent pain and psychological outcomes following traumatic musculoskeletal injury. Presented at the Canadian Pain Society, May 2012. Presenter: Brittany Rosenbloom.
17. Pain control method for total knee arthroplasty amongst orthopedic surgeons in Ontario. Presented at Shields Day, May 2012. Presenter: Dr. Oskar Singer.
18. Are we following the party line? A survey of ASRA affiliated fellowship programs. Presented at Shields Day, May 2012. Presenter: Sanjiv Patel.
19. See one, do one, teach one. Education and experience in international regional anesthesia fellowships. Presented at Shields Day, May 2012. Presenter: Andrew Lansdown.
20. Real-time ultrasound guided subarachnoid block. Presented at Shields Day, May 2012. Presenter: Sanjiv Patel.
21. Bedside ultrasonography for perioperative risk assessment: a case report. Presented at Shields Day 2012. Presenter: Tina Kerelska
22. Survey of current practices-peripheral nerve block insertion by ER physicians for the treatment of pain after hip fracture. Presented at ASRA, San Diego, March 2012. Presenter: Lynn Haslam.
23. Are we following the party line? A survey of ASRA affiliated fellowship programs. Presented at ASRA, San Diego, March 2012. Presenter: Sanjiv Patel.
24. See one, do one, teach one. Education and experience in international regional anesthesia fellowships. Presented at ASRA, San Diego, March 2012. Presenter: Andrew Lansdown.
25. Long Term Functional Outcomes of Regional Anesthesia in Total Knee Arthroplasty. Presented at ASRA May 2011. Presenter: Dr. Steven Choi.
26. A prospective, randomized trial, comparing analgesic efficacy and postoperative functional recovery of either single shot sciatic nerve block or posterior capsule infiltration combined with femoral block for total knee arthroplasty. Presented at ASRA May 2011. Presenter: Ms. Lynn Haslam
27. Older Adults' Pain Medication Usage Following Knee Arthroplasty. Presented at ASRA May 2011. Presenter: Ms. Sam Bremner, MSc student.
28. Effects of Perioperative Alpha-2-Delta Ca⁺ Channel Blockers on the Transition to Chronic Post Surgical

- Pain after Joint Arthroplasty Surgery. Presented at the Benzon Symposium, Copenhagen, Denmark, October 2010. Presenter: Hance Clarke, PhD student
29. Patients' experiences of RA vs GA for orthopedic surgery. Presented at the Canadian Anesthesiologists' Society meeting, Montreal, Quebec, June 2010
 30. Aggressive perioperative multimodal analgesia reduces pain but does not improve function six weeks after THA: A Pilot Study. Presented at the Canadian Anesthesiologists' Society meeting, Montreal, Quebec, June 2010. Presenter: Nicole Carmichael, post-doctoral fellow
 31. Postoperative pain experience in patients undergoing hip arthroplasty under spinal anesthesia. 31st Annual Shields Research Day, Department of Anesthesia, University of Toronto, Toronto, Ontario , Canada May 2010. Presenter: Amy Trang, Anesthesia Resident
 32. The Role of Low Fidelity Ultrasound Training on Regional Anesthesia Skills Acquisition. 31st Annual Shields Research Day, Department of Anesthesia, University of Toronto. Toronto, Canada May 2010. Presenter: Jeff Cheung, Research Fellow
 33. Does ultrasound reduce the minimum effective anesthetic volume required for interscalene brachial plexus block. Presented at the Anaesthetic Research Society Meeting, Edinburgh, Scotland, May 2010.
 34. Does ultrasound reduce the minimum effective anesthetic volume required for interscalene brachial plexus block. Presented at Shield's day, University of Toronto, May 2009. Presenter: Uma Shastri, Anesthesia Resident
 35. Review of Intra-articular analgesia vs interscalene block for shoulder surgery. Presented at the American Society of Regional Anesthesia, Phoenix, Arizona, April 2009. Presenter: Andrew McNaught, Clinical Research Fellow.
 36. Does ultrasound reduce the minimum effective anesthetic volume required for interscalene brachial plexus block. Presented at the American Society of Regional Anesthesia, Phoenix, Arizona April 2009. Presenter: Uma Shastri, Anesthesia Resident
 37. Ultrasound provides a reliable test of local anaesthetic spread during performance of peripheral nerve blocks. Presented at the Anaesthetic Research Society, London, England November 2008.
 38. Does posterior capsule injection provide equivalent analgesia to sciatic block following total knee arthroplasty? Presented at the Canadian Pain Society Meeting, Victoria, BC. May 2008. Presenter: Nataliya Vasylevych, Research Fellow.
 39. An interim analysis of femoral nerve block anatomical insertion point: A Prospective Randomised Double-Blind Controlled Trial. European Society of Regional Anesthesia Annual Scientific meeting, Genoa, Italy. 24th-27th September 2008. Presenter: Jon Anns, Clinical Research Fellow
 40. Does the Extended Analgesia Provided by Continuous Femoral Nerve Blocks Improve Physiotherapy Outcomes in the Days Following Total Knee Replacement? Presented at the American Society of Regional Anesthesia Spring Meeting, Cancun, Mexico May 2008. Presenter: Jan Padzic, Summer student.

41. Does a low volume ultrasound-guided technique reduce common complications of interscalene brachial plexus block. Presented at the Canadian Anesthesiologists' Society Annual Meeting, Halifax, Nova Scotia June 2008. Presenter: Sheila Riaz, Anesthesia Resident
42. Does a low volume ultrasound-guided technique reduce common complications of interscalene brachial plexus block. Presented at the American Society of Regional Anesthesia Spring Meeting, Cancun, Mexico. May 2008. Presenter: Sheila Riaz, Anesthesia Resident
43. Does a low volume ultrasound-guided technique reduce common complications of interscalene brachial plexus block. Presented at Shield's Day, May 2008. Presenter: Nicole Carmichael, Post-doctoral fellow
44. A randomized, controlled, study comparing dual endpoint nerve stimulator technique to ultrasound-guidance for infraclavicular brachial plexus block. Presented at the Anesthetic Research Society, London, England January 2008
45. Implementation of an Acute Pain Service and Regional Block Program in an Orthopedic Hospital. Presented at the National Healthcare Leadership Conference, Toronto, June 2007. Presenter: Sara Robinson, Acute Pain Nurse Practitioner
46. A qualitative systematic review of the benefit of clonidine added to local anesthetic for peripheral nerve block. Presented at Shields Day, Toronto, May 2007. Presented by: Emma Apatu, Research Fellow
47. A qualitative systematic review of the benefit of clonidine added to local anesthetic for peripheral nerve block. Presented at the International Anesthesia Research Society Meeting, Orlando, March 2007. Presented by: Edel Duggan. Clinical Research Fellow
48. A randomized, controlled, study comparing dual endpoint nerve stimulator technique to ultrasound-guidance for infraclavicular brachial plexus block. Presented at the American Society of Regional Anesthesia, Vancouver, British Columbia, May 2007. Best of Meeting Abstract
49. Patient opinions and concerns regarding regional anesthesia. Poster discussion at the American Society of Regional Anesthesia Spring Meeting, Palm Springs, California April 2006
50. A randomized, double-blind study of ultrasound vs peripheral nerve stimulation for popliteal block. Poster discussion at ASRA Spring Meeting, Palm Springs, California April 2006. Presenter: Anahi Perlas
51. Localisation of peripheral nerves in the forearm using ultrasound guidance. Poster discussion at American Society of Regional Anesthesia Spring Meeting, Palm Springs, California, April 2006
52. Ultrasound examination and localisation of the sciatic nerve. Poster discussion at the Canadian Anesthesiologists' Society Meeting, Vancouver, British Columbia, June 2005. Presenter: Hugo Nova, Research Fellow
53. Ultrasound evaluation of paresthesia and nerve stimulation. Poster discussion at the Canadian Anesthesiologists' Society Meeting, Vancouver, British Columbia, June 2005. Presenter: Ahtsham

Niazi, Clinical Research Fellow

54. Ultrasound vs. nerve stimulator guided axillary brachial plexus block. Poster discussion at the Canadian Anesthesiologists' Society Meeting, Vancouver, British Columbia, June 2005
55. Ultrasound Evaluation of Needle tip position during lateral paravascular supraclavicular brachial plexus block. Presented at the American Society of Regional Anesthesia, Toronto, Ontario, April 2005
56. The effect of regional anesthesia vs general anesthesia on paresthesiae one year after ambulatory hand surgery. Presented at the American Society of Regional Anesthesia, Toronto, Ontario, April 2005
57. Regional Anesthesia vs. General Anesthesia for Ambulatory Hand Surgery. Winner of Best Ambulatory Paper at Canadian Anesthesiologists' Society Meeting, Quebec City, Quebec, June 2004. Presenter: Richard Brull, Anesthesia Resident
58. Long term stability of clonidine in clonidine-hydromorphone mixture in implanted intrathecal infusion pumps. Poster presentation at American Pain Society/Canadian Pain Society joint meeting. Vancouver, British Columbia, May 2004. Presenter: Zvia Rudich, Clinical Research Fellow
59. Impact and consequences of attending a medical conference in Toronto during the SARS crisis: Survey of delegates. Poster presentation at the American Pain Society/Canadian Pain Society joint meeting. Vancouver, British Columbia, May 2004. Presenter: Jennifer Stinson, Acute Pain Nurse Practitioner
60. Ultrasound assessment of paresthesia and electrical stimulation for nerve localization: A sensitivity study, Presented at the American Society of Regional Anesthesia, Orlando, Florida, March 2004
61. Nerve Stimulator or Ultrasound for Coracoid Infraclavicular Brachial Plexus Block: Influence of needle position on nerve stimulation and spread of injectate. Presented at American Society of Regional Anesthesia, Orlando, Florida, March 2004. Presenter: Jennifer Porter, Clinical Research Fellow
62. Ultrasound localization of the sciatic nerve. A preliminary study. Presented at American Society of Regional Anesthesia, Orlando, Florida, March 2004. Best of Meeting Abstract. Presenter: Anahi Perlas
63. Regional Anesthesia versus General Anesthesia for Ambulatory Upper Limb Surgery. Presented at PGA, New York, New York, December 2003. Winner of runner up in best abstract competition. Presenter: Richard Brull, Anesthesia Resident
64. Effect of anesthetic technique on paresthesiae following hand surgery. Poster presentation at the Canadian Anesthesiologists' Society, Ottawa, Ontario, June 2003
65. The role of NMDA antagonists in preventive analgesia-A systematic review. Presented as a poster at the Canadian Pain Society, Toronto, Ontario, May 2003. Presenter: Avinash Sinha, Clinical Research Fellow
66. Pain and disability following nerve repair surgery in the upper extremity. Presented as a poster at the Canadian Pain Society, Toronto, Ontario, May 2003. Presenter: Sujata Sikka, Anesthesia Resident
67. A Canadian survey of orthopedic surgeons attitudes to regional anesthesia. Presented as a poster at

American Society of Regional Anesthesia, San Diego, California, April 2003. Presenter: Matthew Oldman, Clinical Research Fellow

68. Regional anesthesia vs. general anesthesia for ambulatory upper limb surgery. Best of Meeting Abstract at American Society of Regional Anesthesia, San Diego, California, April 2003. Presenter: Richard Brill, Anesthesia Resident
69. The role of NMDA antagonists in preventive analgesia-A systematic review. Presented as a poster at American Society of Regional Anesthesia, San Diego, California, April 2003
70. Preventive analgesic effect of small dose ketamine with interscalene brachial plexus block for major shoulder surgery. Best of Meeting Abstract at American Society of Regional Anesthesia, San Diego, California, April 2003
71. A dose-response study of the analgesic efficacy of intra-articular ketamine for knee arthroscopy. Poster presentation at the World Congress of Regional Anesthesia, Barcelona, Spain, June 2002. Presenter: Silviu Brill, Clinical Research Fellow
72. A randomised double-blind comparison of neostigmine added to lidocaine for intravenous regional anaesthesia” Presented as a poster discussion at the American Society for Regional Anesthesia, Vancouver, British Columbia, May 2001
73. Intravenous Bolus of Ropivacaine Provides a Reliable Indication of Intravascular Injection in the Premedicated Patient. Poster presentation at the American Society of Anesthesiologists 2000 Annual Meeting, San Francisco, California, October 2000
74. Patient controlled epidural analgesia-comparison between high volume low concentration and low volume high concentration techniques. Presented as an abstract at the International Symposium on Regional Anesthesia, Quebec City, Quebec, May 2000
75. Intravenous Ropivacaine Test Dose-A Volunteer Study. Presented at the American Society of Regional Anesthesia and Pain Management Silver Anniversary Meeting, Orlando, Florida, March 2000
76. Pain and Disability following Lower Limb Amputation- a Quantitative and Qualitative Study. Presented as a poster at the Pain Society Annual Scientific Meeting, Leicester, England, April 1998
77. Cardiac Arrest in Late Pregnancy- should current guidelines be changed? Runner up in the North East Scotland Society of Anaesthetists Prize paper competition, Stracathro, Scotland, May 1997
78. Pain after Lower Limb Amputation in the North East of Scotland. Presented to the North British Pain Association at the Winter Scientific Meeting, Edinburgh, Scotland December 1997

2. Invited Lectures at International Meetings (since 2000):

1. Visiting Professor: Enhanced Recovery and Regional Anesthesia: Do We Need Regional? Mayo Clinic, Rochester, MN, USA. November 2, 2015.
2. Lecture: Defining the Outcomes that Matter for Perioperative Pain Medicine. American Society of

Anesthesiologists, San Diego, CA. October 24, 2015.

3. Lecture: Where are we now with education in regional anesthesia. LSORA, London, UK. July 2015.
4. Lecture: Outcomes in regional anesthesia: what should we be measuring? LSORA, London, UK. July 2015.
5. Lecture: Pro: I do perform (some) nerve blocks under general anesthesia. European Society of Anesthesiologists. Berlin, Germany, June 2015.
6. Lecture: Regional Anesthesia can decrease the incidence of chronic pain after surgery. ASRA, Las Vegas, USA. May 2015.
7. Lecture: Defining Value in Regional Anesthesia: What are the Outcomes and who gets to define them? ASRA, Las Vegas, USA. May 2015.
8. Lecture: Chronic pain after surgery: does it exist and can we prevent it? AAGBI Winter Scientific Meeting, London, UK. January 13-15 2015.
9. Lecture: Regional anaesthesia papers that are changing my practice. RCOA update meeting, London, UK. November 2014.
10. Lecture: Moving beyond PONV: Redefining regional anesthesia outcomes. Presented at ASRA, Chicago, IL. April 3-5 2014.
11. Workshop: Continuous peripheral nerve blocks. Presented at American Society of Regional Anesthesia, Chicago, IL. April 2014.
12. Lecture: Has ultrasound changed the way we perform brachial plexus blocks. Penn State Hershey, PA. November 2013.
13. Lecture: Does type of anesthesia and analgesia really matter for TKA. Penn State Hershey, PA. November 2013.
14. Workshop: Continuous peripheral nerve blocks. American Society of Regional Anesthesia, Boston, MA, May 2013.
15. Lecture: Evidence-base for use of ultrasound for brachial plexus blocks. Presented at the American Society of Regional Anesthesia, Boston, MA, May 2013.
16. Lecture: Regional Anaesthesia-Improving Postoperative Care. Presented at the Royal College of Anaesthetists, London, UK. November 2012.
17. Chair of session: Current Controversies in Regional Anesthesia. Presented at the American Society of Anesthesiologists Annual Meeting. Washington, DC. October 2012.
18. Chair of poster session: Acute Pain and Regional Anesthesia. Presented at the American Society of Anesthesiologists Annual Meeting. Washington, DC. October 2012.

19. Lecture: Understanding nerve stimulation with ultrasound. International Symposium for Ultrasound in Regional Anesthesia. Toronto, ON. June 2012.
20. Lecture: Implementing Ultrasound Guided Regional Anesthesia in Clinical Practice. International Symposium for Ultrasound in Regional Anesthesia. Toronto, ON. June 2012.
21. Lecture: Evidence Base for Ultrasound for Upper Extremity Blocks. International Symposium for Spinal Sonography. Hong Kong, China. March 2012.
22. Lecture: Abdominal Wall Blocks. International Symposium for Spinal Sonography. Hong Kong, China. March 2012.
23. Workshop: Basic Neuraxial Techniques. International Symposium for Spinal Sonography. Hong Kong, China. March 2012.
24. Workshop: Paravertebral and Thoracic Epidural Techniques. International Symposium for Spinal Sonography. Hong Kong, China. March 2012.
25. Workshop: Distal Upper and Lower Extremity Blocks. American Society of Regional Anesthesia 37th Annual Meeting. San Diego, CA. March 2012.
26. Workshop: Intensive Truncal and Paravertebral. American Society of Regional Anesthesia 37th Annual Meeting. San Diego, CA. March 2012.
27. Lecture: Local Infiltration Analgesia for Total Knee Arthroplasty. Visiting Professor at Radboud University, Nijmegen November, 2011.
28. Lecture: Ultrasound for Femoral, Saphenous and Lumbar Plexus Block. Ultrasound for Every Anesthesiologist. Chicago, Illinois. October 2011.
29. Workshop: Ultrasound for supraclavicular and lumbar plexus block. Ultrasound for Every Anesthesiologist. Chicago, Illinois. October 2011.
30. Lecture: Basic Anatomy for Ultrasound. ASRA Spring Meeting. Las Vegas, Arizona. May 2011.
31. Workshop: Upper Extremity Comprehensive Workshop. American Society of Regional Anesthesia Spring Meeting. Las Vegas, Arizona. May 2011.
32. Workshop: Ultrasound Imaging in Challenging Cases (ASRA Spring Meeting) (ASRA High BMI) Workshop Meeting, Las Vegas, Arizona, May 2011.
33. Lecture: Ultrasound for regional anesthesia: Past, Present and Future. NYSORA World Anesthesia Congress. Rome, Italy, April 2011.
34. Lecture: Why climb: what are the risks and how can they be avoided? NYSORA World Anesthesia Congress. Rome, Italy, April 2011.
35. Lecture: Why climb: my favorite destinations? NYSORA World Anesthesia Congress. Rome, Italy, April

2011.

36. Workshop. Ultrasound for paravertebral block. NYSORA World Anesthesia Congress. Rome, Italy, April 2011
37. Workshop. Ultrasound for brachial plexus block. NYSORA World Anesthesia Congress. Rome, Italy, April 2011.
38. Lecture: Ultrasound for thoracic epidural and paravertebral block. Association of Cardiothoracic Anaesthetists, UK, November 2010
39. Workshop. Ultrasound for thoracic epidural and paravertebral block. Association of Cardiothoracic Anaesthetists, UK, November 2010
40. Ultrasound Workshop, University College, London, UK, May 2010
41. Lecture: Should ultrasound be the technique of choice for upper extremity blocks? University College, London, UK May 2010
42. Lecture: Has ultrasound changed the way we perform regional anaesthesia? University College, London, UK May 2010
43. Workshop: Intensive Ultrasound Workshop. American Society of Regional Anesthesia Spring Meeting. Toronto, ON. April 2010
44. Workshop: Upper Extremity Comprehensive Workshop. American Society of Regional Anesthesia Spring Meeting. Toronto, ON. April 2010
45. Lecture: Optimizing functional outcome for upper extremity orthopedic surgery. American Society of Regional Anesthesia Spring Meeting. Toronto, ON. April 2010
46. Workshop: American Society of Regional Anesthesia Excellence in Ultrasound Workshops. Miami, FL. Jan 2010
47. Workshops. Ultrasound for peripheral nerve blocks. Australasian Society for Ultrasound in Regional Anaesthesia. Brisbane, Australia November 2009
48. Keynote Speaker: Ultrasound for Sciatic Nerve Block. Australasian Society for Ultrasound in Regional Anaesthesia. Brisbane, Australia November 2009
49. Keynote Speaker: Ultrasound for Femoral, Obturator and Saphenous Nerve Blocks. Australasian Society for Ultrasound in Regional Anaesthesia. Brisbane, Australia November 2009
50. Keynote Speaker: Evidence-base for ultrasound guided upper extremity blocks. Australasian Society for Ultrasound in Regional Anaesthesia. Brisbane, Australia November 2009
51. Keynote Speaker: Ultrasound for infraclavicular block. Australasian Society for Ultrasound in Regional Anaesthesia. Brisbane, Australia November 2009

52. Keynote Speaker: Ultrasound for interscalene block. Australasian Society for Ultrasound in Regional Anaesthesia. Brisbane, Australia November 2009
53. Workshop: Ultrasound-guided peripheral nerve blocks. American Society of Anesthesiologists. New Orleans, LA. October 2009
54. Workshop: American Society of Regional Anesthesia Excellence in Ultrasound Workshops, Seattle, WA, July 2009
55. Lecture: Brachial Plexus Blocks below the Clavicle. American Society of Regional Anesthesia Excellence in Ultrasound Workshops, Seattle, WA, July 2009
56. Workshop: American Society of Regional Anesthesia Excellence in Ultrasound Workshops, Baltimore, MD, May 2009
57. Lecture: Brachial Plexus Blocks below the Clavicle. American Society of Regional Anesthesia Excellence in Ultrasound Workshops, Baltimore, MD, May 2009
58. Workshop: Ultrasound guided upper and lower limb blocks. Workshop at the Carolina Cadaver Course, Wake Forest, NC May 2009
59. Lecture: Interscalene brachial plexus blocks. Lecture at the Carolina Cadaver Course, Wake Forest, NC May 2009
60. Workshop: Intensive Ultrasound comprehensive workshop. Workshop at the American Society of Regional Anesthesia meeting, Phoenix, Arizona, April 2009
61. Workshop: Upper extremity nerve blocks comprehensive workshop. Workshop at the American Society of Regional Anesthesia meeting, Phoenix, Arizona, April 2009
62. Lecture: Evidence-base for ultrasound-guided brachial plexus blocks. Presented at the American Society of Regional Anesthesia meeting, Phoenix, Arizona, April 2009
63. Workshop: Single-shot and catheter techniques for supraclavicular block. NYSORA Annual Meeting, New York, NY December 2008
64. Lecture: Approach to difficult blocks. NYSORA Annual Meeting, New York, NY December 2008
65. Workshop: Ultrasound guided regional anesthesia. Workshop at the American Society of Anesthesiologists' Annual Meeting, Orlando, FL. October 2008
66. Lecture: Ultrasound guidance for continuous catheter techniques. Lecture at the American Society of Anesthesiologists' Annual Meeting, Orlando, FL. October 2008
67. Lecture: Ultrasound guided brachial plexus block: current status and future directions. Department of Anesthesia, Cork University Hospital, Cork, Ireland September 2008

68. Workshop: Blocks anterior to the hip and blocks below the clavicle. The Art of Plexus Anesthesia, University College Dublin, Ireland September 2008
69. Keynote Address: Ultrasound guided brachial plexus block: current status and future directions. The Art of Plexus Anesthesia, University College Dublin, Ireland September 2008
70. Workshop: Ultrasound guided brachial plexus blocks and ultrasound for lumbar medial branch blocks. World Congress of Pain Satellite Symposium, Glasgow, UK. August 2008
71. Course Organizer: Satellite symposium at World Congress of Pain, Glasgow, UK August 2008. Use of ultrasound for diagnosis and management of chronic pain
72. Journal Rounds Moderator, Department of Anesthesiology, University of California, San Diego May 2008
73. Lecture: Optimizing Function following Total Hip and Knee Arthroplasty: Can the anesthesiologist make a difference? University of California, San Diego May 2008
74. Lecture: Will ultrasound change the way we perform peripheral nerve blocks? University of California San Diego, May 2008
75. Workshop: Ultrasound-guided nerve blocks. American Society of Regional Anesthesia, Cancun, Mexico, May, 2008
76. Workshop: Masterclass: Upper extremity blocks. American Society of Regional Anesthesia, Cancun, Mexico, May, 2008
77. Lecture: Has ultrasound changed the way we perform upper extremity blocks. American Society of Regional Anesthesia, Cancun, Mexico, May, 2008
78. Visiting Professor, University of Oslo, Norway, November 2007. Lectures: Ultrasound for peripheral nerve blocks, Interscalene block, Femoral, Popliteal and Sciatic blocks, Continuous catheters and surveillance
79. Workshop: Infraclavicular and axillary block. Advances in Physiology and Pharmacology in Anesthesia and Intensive Care, Wake Forest University School of Medicine, Hilton Head, South Carolina October 2007
80. Lecture: Ultrasound for regional anesthesia and central venous access: Should it be my first choice? Advances in Physiology and Pharmacology in Anesthesia and Intensive Care, Wake Forest University School of Medicine, Hilton Head, South Carolina October 2007
81. Workshop leader. Ultrasound for Interventional Pain Procedures. International Federation of Pain Medicine, Montreal June 2007
82. Workshop: Ultrasound-guided peripheral nerve blocks. American Society of Regional Anesthesia and Pain Medicine, Vancouver, April 2007

83. Workshop. Continuous lower limb blocks. American Society of Regional Anesthesia and Pain Medicine, Vancouver, April 2007
84. Lecture: Ultrasound guided regional anesthesia: will it be the future standard? American Society of Regional Anesthesia and Pain Medicine, Vancouver, April 2007
85. Workshop: Ultrasound in regional anesthesia: Lectures: Ultrasound: Past, Present and: Future and Guidance techniques, Needle Identification and Sterility Zurs, Austria. January 2007
86. Lecture: Evidence and training methods. Ultrasound in regional anaesthesia, 3rd National Symposium, Royal College of Physicians, London, England, November 2006
87. Visiting Lecturer. Centre Clinical, Soyaux, France. July 2006
88. Workshop: Use of ultrasound in regional anesthesia. Controversies and Fundamentals in Regional Anesthesia. May 2005. Warldorf Astoria Hotel, New York, NY
89. Lecture: Catheter techniques are superior to Long-Acting Peripheral Nerve Blocks Alone. Controversies and Fundamentals in Regional Anesthesia. May 2005. Warldorf=Astoria Hotel, New York, NY
90. Chair of morning session. International Symposium on Use of Ultrasound in Regional Anesthesia, Toronto, ON April 2006.
91. Workshop: Ultrasound for supraclavicular and infraclavicular blocks. International Symposium on Ultrasound in Regional Anesthesia, Toronto, ON April 2006
92. Lecture: Ultrasound-Guided Sacral Plexus Blocks. International Symposium on Ultrasound in Regional Anesthesia, Toronto, ON, April 2006
93. Workshop: Ultrasound-guided peripheral nerve blocks: Sciatic and femoral blocks. American Society of Regional Anesthesia Spring Meeting, Palm Springs, California April 2006
94. Workshop: Ultrasound-guided peripheral nerve blocks: Brachial plexus blocks below the clavicle. American Society of Regional Anesthesia Spring Meeting, Palm Springs, California April 2006
95. Symposium Chair: Use of Ultrasound in Regional Anesthesia. American Society of Regional Anesthesia Spring Meeting, Palm Springs, California, April 2006
96. Visiting Lecturer, Use of Ultrasound for Regional Anesthesia. Eastern Maine Medical Centre, Bangor, Maine. February 2006
97. Visiting Professor: Use of ultrasound in regional anesthesia. National Naval Medical Centre, Maryland, USA. September 14th 2005
98. Visiting Professor: Use of ultrasound in regional anesthesia. Walter Reed Army Medical Centre, Washington D.C., September 13th 2005

99. Workshop: Ultrasound-guided peripheral nerve blocks. American Society of Regional Anesthesia , Toronto, Canada. April 2005
100. Workshop: Variations of the Supraclavicular Block. American Society of Regional Anesthesia, Toronto, Canada. April 2005
101. Workshop: Variations of the Supraclavicular Block. American Society of Regional Anesthesia, Walt Disney World, Florida. March 2004
102. Lecture: Can we prevent postoperative pain. Hospital for Special Surgery, New York, New York, December 2003
103. Workshop: Is it safe to use a neuraxial block in a patient with aortic stenosis? American Society of Regional Anesthesia, San Diego, April 2003
104. Workshop: Variations of the Supraclavicular Block. American Society of Regional Anesthesia, San Diego, April 2003
105. Chairperson of Session: Acute Pain-State of the Art. World Congress of Anesthesiologists, Montreal, June 2000

3. Invited Lectures at Local/National Meetings (since 1998):

1. Lecture: Consistency in ultrasound-guided regional anesthesia: upper limb techniques. Canadian Anesthesiologists Society, Ottawa, June 2015.
2. Lecture: Continuous peripheral Nerve Blocks: Principles and Practice. Holland Centre Preceptorship, Toronto, ON. November 2013.
3. Lecture: Biology of Pain. Undergraduate Lecture, Department of Human Biology, University of Toronto. October 2013
4. Lecture: Beginning a career in academia: the good, the bad and the ugly. Presented to University of Calgary Anesthesia Residents. June 2013.
5. Lecture: Does type of anesthesia and analgesia really matter for total knee replacement? Lecture as visiting professor at University of Calgary, Department of Anesthesia, June 2013.
6. Lecture: Has ultrasound changed the way we perform brachial plexus blocks? Lecture as visiting professor at University of Calgary, Department of Anesthesia, June 2013.
7. Lecture: Management of the patient for shoulder surgery in the sitting position. Canadian Anesthesiologists' Society, Calgary, AB, June 2013. Cancelled due to flooding in Calgary.
8. Workshop: Ultrasound-guided regional anesthesia. Advanced upper limb. Canadian Anesthesiologists' Society, Calgary, AB, June 2013. Cancelled due to flooding in Calgary.

9. Lecture: Continuous peripheral Nerve Blocks: Principles and Practice. Holland Centre Preceptorship, Toronto, ON. April 2013.
10. Lecture: Continuous peripheral Nerve Blocks: Principles and Practice. Holland Centre Preceptorship, Toronto, ON. January 2013.
11. Lecture: Biology of Pain. Undergraduate Lecture, Department of Human Biology, University of Toronto. October 2012
12. Lecture: Interscalene, Supraclavicular, Cervical Plexus and Suprascapular Blocks. Ski and Scan 2012, Banff, AB, February 2012.
13. Lecture: Practical Applications of Ultrasound. Ski and Scan 2012, Banff, AB, February 2012.
14. Workshops: Ski and Scan 2012, Banff, AB, February 2012.
15. Lecture: Continuous peripheral Nerve Blocks: Principles and Practice. Holland Centre Preceptorship, Toronto, ON. April 2012.
16. Lecture: Continuous Femoral Nerve Block for Total Knee Arthroplasty. Regional Anesthesia and Pain Medicine 2011, Toronto, Ontario September 2011.
17. Ultrasound workshop. Regional Anesthesia and Pain Medicine 2011, Toronto, Ontario September 2011.
18. Lecture. Pain Management Across the Continuum: Bridging the Gap from Acute Care to Rehabilitation. Pain Management Conference 2011, Toronto, Ontario, November 2011.
19. Lecture: Biology of Pain. Undergraduate Lecture, Department of Human Biology, University of Toronto. October 2011
20. Lecture: Multimodal analgesia in 2011: what is the current status? 52nd Annual McGill Anesthesia Update. Montreal May 2011
21. Lecture: Ultrasound and outcome. 52nd Annual McGill Anesthesia Update. Montreal May 2011
22. Lecture: Professors Rounds: Ultrasound for Regional Anesthesia; Past, Present and Future. Department of Anesthesia, University of Toronto. January 2011
23. Lecture: Biology of Pain. Undergraduate Lecture, Department of Human Biology, University of Toronto. October 2010
24. Lecture: Ultrasound for regional anesthesia: past, present and future. Lecture to residents at Trio restaurant, Toronto. August 2010
25. Workshop: Trunk blocks. Canadian Anesthesiologists' Society. Montreal June 2010
26. Workshop: Lower limb blocks masterclass. Canadian Anesthesiologists' Society. Montreal June 2010

27. Lecture: Avoiding Complications of Regional Anesthesia. Ski and Scan Ultrasound meeting, Lake Louise, Alberta. March 2010
28. Lecture: Introduction to Ultrasound. Ski and Scan Ultrasound meeting, Lake Louise, Alberta. March 2010
29. Visiting Professor Lecture: Avoiding complications of peripheral nerve blocks. University of Western Ontario, London, ON, September 2009
30. Visiting Professor Lecture: Can regional anesthesia improve patient outcomes. University of Western Ontario, London, ON, September 2009
31. Lecture: Ultrasound below the clavicle. Regional Anesthesia and Pain Medicine, Niagara, ON. August 2009
32. Workshop: Ultrasound-guided regional anesthesia. Regional Anesthesia and Pain Medicine, Niagara, ON. August 2009
33. Lecture: Con: Intraneural injection should not be used for peripheral nerve block. Canadian Anesthesiologists' Society Annual Meeting, Vancouver, June 2009
34. Lecture: Ultrasound-guided brachial plexus blocks; past, present and future. North York General Hospital, June 2009
35. Lecture: Ultrasound-guided brachial plexus blocks: past, present and future. St Michael's Hospital Department of Anesthesia Grand Rounds January 2009
36. Lecture: Biology of Pain. 4th year undergraduate biology class, University of Toronto. Nov 2008
37. Panel Discussion Regional Anesthesia and Pain Medicine, Niagara, ON, September 2008
38. Masterclass: Regional Anesthesia for Upper and Lower Limb Techniques. Regional Anesthesia and Pain Medicine, Niagara, ON September 2008
39. Lecture: Continuous femoral nerve block after total knee replacement: acute pain control without loss of function. Regional Anesthesia and Pain Medicine, Niagara, ON September 2008
40. Lecture: Ultrasound for chronic pain: Neural Sonoanatomy for the Pain Physician. July 2008, Sunnybrook Health Sciences Centre
41. Moderator, Regional Anesthesia poster session, CAS annual Meeting June 17th 2008
42. Moderator: Multimodal analgesia for acute pain control, Canadian Anesthesiologists' Society Annual Meeting June 2008.
43. Chair of Regional Anesthesia and Acute Pain section, Organizer of RAPM program, Canadian Anesthesiologists' Society Meeting, Halifax, June 2008

44. Holland Centre lecture. April 08. Will ultrasound change the way we perform upper extremity blocks
45. Lecture: Considerations in regional anesthesia. Anesthesia Residents, University of Toronto Nov 07
46. Lecture: Biology of Pain. 4th year undergraduate biology class, University of Toronto. Nov 2007
47. Workshop Leader: Lower Limb Blocks Masterclass. Regional Anesthesia and Pain Medicine Deerhurst resort, Ontario, September 2007
48. Lecture: Look and listen before you block: Avoiding complications of peripheral nerve blocks. Regional Anesthesia and Pain Medicine Deerhurst resort, Ontario, September 2007
49. Workshop: Ultrasound for basic peripheral nerve blocks. Canadian Anesthesiologists' Society, Calgary, June 2007
50. Workshop: Thoracic epidural and basic peripheral nerve blocks. Canadian Anesthesiologists' Society, Calgary, June 2007
51. Lecture: Ultrasound-guided peripheral nerve blocks: should it be my first choice? Canadian Anesthesiologists' Society, Calgary, June 2007
52. Lecture: Preoperative Pain Management Initiatives in Musculoskeletal Surgery. Musculoskeletal Rounds, Sunnybrook Hospital, May 2007
53. Lecture: Ultrasound in regional anesthesia and pain management. Course on Interventional Pain Management. Sunnybrook Health Sciences Centre April 2007
54. Lecture: Principles of ultrasound-guided procedures. Course on Interventional Pain Management. Sunnybrook Health Sciences Centre April 2007
55. Workshop leader: Lower Limb Regional Anesthesia Techniques. Tremblant Anesthesia Meeting. February 2007
56. Lecture: Update on Anticoagulants and Regional Anesthesia. Tremblant Anesthesia Meeting. February 2007
57. Lecture: Use of ultrasound for regional anesthesia. Surgical services rounds, Holland Orthopedic and Arthritic Centre. February 2007
58. Lecture: Use of Ketamine in Acute Pain Management. Regional Anesthesia and Pain Medicine 2006, Sutton Place Hotel, September 2006
59. Lecture and masterclass: Use of ultrasound for peripheral nerve blocks. Regional Anesthesia and Pain Medicine 2006, Sutton Place Hotel, October 2006
60. Lecture: Use of ultrasound for peripheral nerve blocks. Nanaimo Regional General Hospital, British Columbia, August 2006

61. Workshop: Ultrasound for peripheral nerve blocks. Canadian Anesthesiologists' Society, Toronto, Ontario. June 2006
62. Workshop: Ultrasound for peripheral nerve blocks. Canadian Anesthesiologists' Society, Toronto, Ontario. June 2006
63. Lecture: Peri-operative multimodal pain management. Lecture at Canadian Anesthesiologists' Society, Toronto, Ontario. June 2006
64. Workshop: Use of stimulation techniques in regional anesthesia. University of Toronto Hands-On Regional Anesthesia Workshop February 2006
65. Workshop: Ultrasound for regional anesthesia. Okanagan Anesthesia Conference. Silver Star Resort, British Columbia Jan 2006
66. Lecture: Getting the Best Bang for your Analgesic Buck: Best Strategies for Perioperative Pain Management. Okanagan Anesthesia Conference, Silver Star Resort, British Columbia Jan 2006
67. Lecture: Defining the use of ultrasound in regional anesthesia. Okanagan Anesthesia Conference. Silver Star Resort, British Columbia January 2006
68. Workshop leader: Use of ultrasound in regional anesthesia. Anesthesia Practice symposium. Delta Chelsea Hotel November 2005
69. Workshop leader: Blocks above the clavicle. Regional Anesthesia and Pain Medicine. September 2005. Niagara-on-the-Lake, Ontario
70. Lecture: Use of Dexamethasone and gabapentin in acute pain. Regional Anesthesia and Pain Medicine. September 2005. Niagara-on-the-Lake, Ontario
71. Workshop Leader. Intensive Upper Limb Workshop. Regional Anesthesia and Pain Medicine. September 2005. Niagara-on-the-Lake, Ontario
72. Chair of poster session: Acute and chronic pain management. Canadian Anesthesiologists' Society Annual meeting, Vancouver, June 2005
73. Lecture: Ultrasound-guided brachial plexus blocks. Canadian Anesthesiologists' Society Annual meeting, Vancouver June 2005
74. Workshop: Ultrasound-guided peripheral nerve blocks. Canadian Anesthesiologists' Society Annual Meeting, Vancouver June 2005
75. Lecture: Multimodal analgesia: Principles in practice. Canadian Anesthesiologists' Society Annual meeting, Vancouver, June 2005
76. Lecture: Surgical rehabilitation: What is the problem and how can we solve it? Canadian Anesthesiologists' Society Annual meeting, Vancouver, June 2005

77. Chair of session: Multimodal analgesia to aid surgical rehabilitation. Canadian Anesthesiologists' Society Annual meeting, Vancouver, June 2005
78. Workshop: Use of stimulation techniques in regional anesthesia. University of Toronto Hands-On Regional Anesthesia Workshop June 2005
79. Workshop: Use of stimulation techniques in regional anesthesia. University of Toronto Hands-On Regional Anesthesia Workshop March 2005
80. Lecture: Ultrasound-guided infraclavicular block. The Varkey Continuous Catheter Regional Anesthesia and Anatomy Workshop. University of Western Ontario Dec 2004
81. Workshop: Ultrasound-guided lower limb blocks. University of Toronto Ultrasound Guided Regional Anesthesia Workshop December 2004
82. Workshop: Use of stimulation techniques in regional anesthesia. University of Toronto Hands-On Regional Anesthesia Workshop October 2004
83. Lecture: To block or not to block: That is the Question. Toronto Western Hospital Department of Anesthesia at Adegas restaurant, Toronto November 2004
84. Workshop: Ultrasound-guided supraclavicular and infraclavicular blocks. University of Toronto Ultrasound Guided Regional Anesthesia Workshop July 16th 2004
85. Workshop: Use of stimulation techniques in regional anesthesia. University of Toronto Hands-On Regional Anesthesia Workshop June 12th 2004
86. Case Discussion: Cardiac arrest under central neuraxial block: etiology, prevention and treatment. Canadian Anesthesiologists' Society 60th Annual meeting, Quebec City, QC, June, 2004
87. Symposium on applying ultrasound technology in Anesthesia: Ultrasound for regional anesthesia. Canadian Anesthesiologists' Society 60th Annual meeting, Quebec City, QC, June, 2004
88. Pro:Con debate: Pro: Regional anesthesia is better than GA for patients undergoing major surgery. Lecture at the Toronto Anesthesia Symposium, Toronto April 2004
89. Lecture: How to manage chronic pain. Canadian Rheumatology Association, Orlando, Florida, October 2003
90. Chair: Do volatile anesthetics provide clinically relevant neuroprotection? Debate at Oro Restaurant, Toronto, September 2003
91. Lecture: Interventional Techniques for chronic pain. Canadian Pain Society Interdisciplinary Pain Education Day, Toronto, May 2003
92. Chair of session: Controversies in the medical management of chronic pain. Canadian Pain Society Interdisciplinary Pain Education Day, Toronto, May 2003

93. Lecture: Use of Controlled-Release Opioids in Acute Pain. Lecture to Department of Anesthesia, University Health Network, Oro restaurant, November 2002
94. Lecture: Use of TENS in chronic pain management. Wasser Pain Management Centre, Mount Sinai Hospital, October 2002
95. Lecture: New adjuncts for perioperative pain control. Anesthesia Grand Rounds, Toronto General Hospital, September 2002
96. Lecture. New Adjuncts. Regional Anesthesia and Pain Medicine, Toronto, September 2002
97. Lecture: Intrathecal Infusions for Chronic Pain Management. Canadian Pain Society. Winnipeg, May 2002
98. Chair of session: Targeted Interventions for Chronic Pain Management. Canadian Pain Society. Winnipeg, May 2002
99. Lecture: Nerves, Needles and Blocks for Chronic Pain Management. University Health Network Pain Conference, Toronto, January 2002
100. Workshop: Psoas Compartment and 3-in-1 Blocks. Regional Anesthesia and Pain Medicine 2000, Delta Chelsea Hotel, Toronto October 2000
101. Lecture: Analgesic Adjuncts for Regional Anesthesia. Regional Anesthesia and Pain Medicine 2000, Delta Chelsea Hotel, Toronto October 2000
102. Lecture: Pain after Amputation-Prevention or Cure? Winter Scientific Meeting of the Scottish Society of Anaesthetists, October 1998
103. Lecture: Analgesics for Mountain Rescue. Mountain Rescue Committee for Scotland, Glenmore Lodge, October 1998
104. Lecture: The Management of Chronic Pain. Nursing and midwifery conference on pain management, Aberdeen Exhibition and Conference Centre, September 1998
105. Lecture: Pain and Disability following Lower Limb Amputation. Scottish Society of Anaesthetists. Annual General Meeting and the Scottish Society of Anaesthetists Trainees' Meeting, June 1998

G. INVITED MEDIA COMMENTARIES AND FEATURES

At Sunnybrook Health Sciences Centre, I have worked with the Hospital Foundation to highlight the need for improved postoperative pain management as well as initiatives that we have developed to improve pain control after surgery. This has led to articles in medical newspapers and on television across Canadian news networks.

1. March 2009: Hospital News: Anesthesiologist leads innovative efforts in pain control.
(<http://www.hospitalnews.com/modules/magazines/mag.asp?ID=3&IID=117&AID=1522>)
2. March 2009: Sunnybrook Media (YouTube): Pain Control.
(http://www.youtube.com/watch?v=nMm9zFFsmrI&feature=channel_page)
3. February 24, 2009: City TV: Treat pain before surgery, Sunnybrook researchers suggests.
(Featured in Ontario and British Columbia) (http://www.citynews.ca/news/news_32372.aspx)
4. February 24, 2009: Global TV: Treat pain before surgery, Sunnybrook researchers suggests.
5. Fall 2009: Holland MSK Team News: Anesthetic technique greatly reduces pain and minimizes pain after surgery.
6. June 2010: Press release: Ultrasound-guided anesthetic technique contributes to safety and effectiveness of nerve blocks
7. January 2011: Sunnybrook media: Taking the pain away.
<http://www.youtube.com/watch?v=LI6og7OLEI8>

H. GRADUATE STUDENT SUPERVISION AND RESEARCH MENTORSHIP

I have mentored students at undergraduate, graduate and postgraduate level since 2000:

Previous Graduate Students:

1. Brittany Rosenbloom BA: MSc, IMS, Primary supervisor
Thesis: Predictors of chronic pain and PTSD after major orthopedic trauma.
Completed MSc in January 2014.

Awards to Brittany Rosenbloom:

CIHR Travel Award 2012 (Institute of Musculoskeletal Health)	\$1000
UofT SGS Conference Grant (Winter 2012 competition)	\$600
Dr. Alan W. Conn OSOTF Graduate Award	\$10,000
IMS Fellowship Award 2012	\$5000
Holland MSK scholarship 2012	\$3500
Toronto Musculoskeletal Centre Award 2013	\$7250

2. Samantha Bremner: MSc, Institute of Medical Sciences, Primary Supervisor
Thesis: A qualitative study of patient experience of pain medication adherence following discharge after total knee arthroplasty. Completed MSc in September 2011.

Awards to Samantha Bremner:

IMS entrance award	\$5000
OSOTF Laws Award 2009-2010	\$15000
IMS Open Scholarship	\$3000
OSOTF Laws Award 2010-2011	\$10000
Holland Musculoskeletal Research Award	\$3500
CIHR Frederick Banting and Charles Best	\$17500
Canada Graduate Scholarship Award	

External examiner:

1. Dr. Brian O'Donnell. MD Thesis. University College, Cork, Ireland. October 2010
2. Dr. Stephen Renes, PhD Thesis, Radboud University, Nijmegen, Netherlands. November 2011
3. Dr. Michael Fredrickson, PhD Thesis, University of Auckland, New Zealand. January 2011 and 2013
4. Dr. Syed Sultan, PhD Thesis, University College, Cork, Ireland. November 2013
5. Dr. Atif Shafqat, PhD Thesis, University of Nottingham, UK. November 2015

Internal Examiner (Institute of Medical Science, University of Toronto):

1. Mr. Robert Bonin, PhD oral examination, December 2010
2. Ms. Emily Glazer, MSc oral examination, January 2012
3. Dr. Hance Clarke, PhD oral examination, April 2013
4. Dr. William To, MSc oral examination, Feb 2013

Previous Students:

1. Kathleen Nelligan (UWO Medicine) Summer 2013.
Project: Sedation vs GA for shoulder surgery with interscalene block.
2. Kelly Chin (U of T Science). Summer 2013.
Project: Pain and disability after major MSK trauma.
3. Catherine Nix (Dublin, Ireland) Jan 2012-2013.
Research project: Scoping review: Teaching using ultrasound for Regional Anesthesia
4. Liza Tharakan (Cambridge, UK) July 2013-2014
Research project: Optical Coherence Tomography for Visualizing Neurological Structures
5. Clinical Research Fellow: Sachin Rastogi (Newcastle, UK) Jan 2013-June 2013
Research project: Optical Coherence Tomography for Visualizing Neurological Structures
6. Clinical Research Fellow: Moein Tavakkolizadeh (London, UK) July 2012-June 2013
Research project: Can ultrasound guidance reduce the dose of local anesthetics for successful interscalene brachial plexus block: a systematic review
8. Research resident: Jane Wang October 2012-February 2013
Project: MEAV₉₅ of ropivacaine 0.75% for interscalene brachial plexus block
9. Clinical Research Fellow, University of Toronto: Andrew Lansdown (Brisbane, Australia) July 2011-present. Research project: Survey of teaching methods for ultrasound-guided regional anesthesia (published)
10. Clinical Research Fellow, University of Toronto: Patrick Conroy (Ireland). Jan 2011-Dec 2011. Research project: Ultrasound-guided intrathecal techniques (published)

11. Summer student, Sunnybrook Research Institute: Laura Bosco. May-August 2012. Research project: Patient controlled oral analgesia for total hip arthroplasty.
12. Clinical Research Fellow, University of Toronto: Stephen Choi (Toronto). July 2010-July 2011. Research project: Rehabilitation outcomes systematic review. (in press)
13. Summer student, Sunnybrook Research Institute: Patrick Twohig: May-August 2011: Research project: Ultrasound-guided intrathecal techniques.
14. Summer student, Institute of Medical Science, University of Toronto: Katrina Zefkic: May-August 2011: Research project: Use of a novel coiled catheter for continuous peripheral nerve blocks. (submitted)
15. Clinical Research Fellow, University of Toronto: Cedric Luyet (Switzerland). July 2010-August 2011. Research Project: Use of a novel coiled catheter for femoral block. (submitted)
16. Summer student, Patrick Twohig: May-August 2010: Research project: Ultrasound-guided intrathecal techniques
17. Clinical Research Fellow, University of Toronto: Mahnaz Afsari (New Zealand). Jan 2010-Dec 2010. Research project: Local anesthetic infiltration
18. Clinical Research Fellow, University of Toronto: Haresh Mulchandani (England). July 2009-June 2010. Research project: Persistence in Ultrasound Imaging (with Prof Paul Milgram, MIE)
19. Clinical Research Fellow, University of Toronto: Johanne Lynch (Ireland). Jan 2009-Dec 2009. Research project: Chronic Pain following hip and knee arthroplasty. (published)
20. Clinical Research Fellow, University of Toronto: Lisa Lin (Australia). July 2008-July 2009. Research topic: A qualitative systematic review of the use of ultrasound for upper extremity block. (published)
21. Clinical Research Fellow, University of Toronto: Andrew McNaught (UK). Jan-Dec 2008. Research topic MEAV for interscalene block with ultrasound or peripheral nerve stimulation. (published)
22. Research Resident, University of Toronto: Uma Shastri, July-Dec 2008. Research topic: Can ultrasound reduce common complications of peripheral nerve block?" Awarded resident research grant from PSI (see grants section)
23. Summer student, Victoria Dickinson Summer 2008. Research topic: Does optimal control of chronic and acute pain predict improved function after total hip arthroplasty? (published)
24. Clinical Research Fellow, University of Toronto: Paul McHardy (Canada), July 07-Dec 07. Research Topic: Can ultrasound predict intravascular injection during peripheral nerve block? (published)

25. Postdoctoral fellow, University of Toronto: Nicole Carmichael July 07-Aug 09.
Research Topic: Does optimal control of chronic and acute pain predict improved function after total hip arthroplasty? (published)
26. Research resident, University of Toronto: Sheila Riazi, July-Dec 07.
Research Topic: Does a low volume US guided technique reduce common complications of interscalene block? (published)
Awarded resident research grant from PSI (see grants section)
27. Summer student, Sunnybrook Research Institute 2007: Victoria Dickinson.
Research Topic: Can US predict intravascular injection during peripheral nerve block? (published)
Summer studentship award: \$1600
28. Summer student, Sunnybrook Research Institute 2007: Jan Padzik.
Research Topic: Benefit of adding continuous femoral nerve block after total knee arthroplasty
29. Research resident, University of Toronto. Efreem Mandelcorn, July 06-June 07.
Research Topic: Does use of chloroprocaine give faster block onset compared to lidocaine for retrobulbar block? (published)
30. Clinical Research Fellow, University of Toronto: Carmen Kummer (Brazil), Sep 06-June 07
Research topic: Regional anesthesia vs general anesthesia for total joint surgery
31. Clinical Research Fellow, University of Toronto: Colin Sinclair (UK), Jan 07-Dec 07.
Research topic: Role of low fidelity ultrasound training on skills acquisition in Anesthesia residency training
32. Clinical Research Fellow, University of Toronto: Luiz Soares (Brazil), Jan 2006-September 2006.
Research topic: Use of ultrasound for posterior tibial nerve block
33. Clinical Research Fellow, University of Toronto: Edel Duggan (Ireland), Jul 2006-September 2006.
Research topic: Systematic review of use of clonidine in peripheral nerve block (published)
34. Research resident, Department of Anesthesia, University of Toronto: Nick Lo.
Research topic: Outcome following axillary block using ultrasound guidance (published)
35. Clinical Research Fellow, University of Toronto: Carina Li (Hong Kong), Jan 2005-December 2005.
Research topic: Practice variation amongst acute pain practitioners
36. Clinical Research Fellow, University of Toronto: Ahtsham Niazi (Ireland), Jul 2004-Jun 2005.
Research topic: The sensitivity of motor response to nerve stimulation and paresthesia for nerve localization as evaluated by ultrasound (published)
37. Clinical Research Fellow, University of Toronto: Imad Awad (Ireland), Jan 2004-Dec 2004.
Research topic: Ultrasound vs Peripheral Nerve Stimulation for Axillary Block (published)
38. Clinical Research Fellow, University of Toronto: Jenny Porter (Ireland).
Research topic: Use of ultrasound for infraclavicular brachial plexus block (published)

39. Research Resident, University of Toronto: Sujata Sikka.
Research topic: Pain and disability following nerve repair surgery in the upper extremity
40. Clinical Research Fellow, University of Toronto: Liam Doran (Ireland), Jul 2002-Jun 2003.
Research topic: Patient understanding and concerns regarding regional anesthesia (published)
41. Clinical Research Fellow, University of Toronto: Avinash Sinha (UK), Jul 2002-Jun 2003.
Research topic: Systematic review of NMDA antagonists for preventive analgesia (published)
42. Summer student: Andrea Leung, 2002 and 2003.
Research topic: Orthopedic surgeons opinions regarding regional anesthesia (published)
43. Research resident, Department of Anesthesia, University of Toronto: Richard Brull.
Research topic: Regional Anesthesia vs General Anesthesia for Upper Limb Surgery (published)
PSI FOUNDATION Resident award to Dr. Brull: \$2000
44. Clinical Research Fellow, University of Toronto: Matthew Oldman (UK), Jan 2002-Dec 2002.
Research topic: Orthopedic opinions regarding regional anesthesia (published)
45. Clinical Research Fellow, University of Toronto: Silviu Brill (Israel), Jan 2001-Dec 2001.
Research topic: Analgesic effect of intra-articular ketamine following knee arthroscopy (published)
46. Clinical Research Fellow, University of Toronto: Andrew Choyce (London UK), Jan 2000-Dec 2000.
Research topic: Analgesic effect of ketamine added to local anesthetic for interscalene brachial plexus block

I. INTERDISCIPLINARY CLINICAL ACTIVITIES AND QUALITY ASSURANCE

I have led a number of interdisciplinary and quality assurance projects with the aim of measuring and improving patient care. Although not the primary goal, many of these projects have been presented at national and international meetings and have led to peer-reviewed publications.

Projects include:

1. Regional Anesthesia Database at Toronto Western Hospital:

We developed a database to assess success of peripheral nerve block techniques and determined that newer methods using ultrasound produced greater success and fewer adverse effects (Lo N et al CJA 2008).

2. Multidisciplinary efforts at optimizing pain and functional outcome following total hip and knee replacement

I led a multidisciplinary (surgery, nursing, physiotherapy and anesthesia) team focusing on optimization of pain and function following total hip and knee replacement. We met on a monthly basis to examine patient outcomes and make alterations to practice based on this data.

3. Continuous femoral nerve block for pain after total knee replacement

After joining Sunnybrook HSC in 2006 I led the introduction of continuous peripheral nerve block techniques and then assessed their efficacy for pain control and optimization of function.

4. Early pain control following total hip arthroplasty

We have performed qualitative research examining patient experiences of regional and general anesthesia for hip and knee replacement. Although patients broadly preferred regional anesthesia we did find that a number of patients experienced pain on resolution of spinal anesthesia after hip replacement. We subsequently re-examined this population and determined that 40% of patients had moderate-severe pain after resolution of spinal anesthesia. This led to changes in anesthesia and pain management practice to correct this problem (Webster F et al RAPM 2011).

J. TEACHING ACTIVITIES:

I greatly enjoy teaching and I am an active teacher at the local (University of Ottawa and University of Toronto undergraduate and postgraduate level), Provincial (local meetings), National (National Anesthesia Society meetings) and International levels.

I have taught an annual lecture on “Biology of Pain” to a human biology undergraduate course and gave several lectures to anesthesia residents on regional anesthesia and acute pain management annually. I also taught on a weekly basis to our own fellows and residents at Sunnybrook Health Sciences Centre.

I was awarded “best regional anesthesia teacher of the year award” at Sunnybrook for 2007, 2008 and 2011. This is an award given annually based on votes of all twelve elective regional anesthesia residents and three regional anesthesia fellows.

I greatly enjoy teaching and believe that the interaction that teaching allows with students helps to develop both better methods for patient management and new research ideas. I also enjoy developing new ways to improve teaching of both regional anesthesia and pain management either through small group or lecture settings. From 2002-2006 I directed the regional anesthesia and acute pain fellowship at Toronto Western Hospital and since 2006 have directed the regional anesthesia and acute pain fellowship at Sunnybrook Health Sciences Centre which attracts high quality candidates from all over the world. From 2007-2008 I was the chair of the regional anesthesia and acute pain section of the Canadian Anesthesiologists’ Society and have been faculty at the American Society of Regional Anesthesia and Pain Medicine since 2003.

In the past I have had significant involvement with teaching chronic pain management through work at the Wasser Pain Management Centre and through lectures at the local and national level (Canadian Pain Society).

Since 2000 I have helped to develop programs for several pain and regional anesthesia meetings and was on the organizing committee for the Canadian Pain Society conference in 2003 in Toronto. Since starting at Sunnybrook in 2006 I have led the development of our own Annual Holland Centre Symposium (now in the third year) focusing on multidisciplinary management of patients undergoing joint arthroplasty and also have led the development and successful completion of a further symposium on regional anesthesia involving ultrasound technology (Ski and Scan, Lake Louise, March 2010). More recently Dr. Martin Van Der Vyver and I have developed a one-day preceptorship program on the use of continuous peripheral nerve block techniques for major orthopedic surgery.