



Newsletter of Anesthesiology Research

At Queens - February 2009

The NARQ



Queen's
UNIVERSITY



Message from the Department Head

The current issue of the NARQ summarizes Anesthesiology's research endeavors over the past year. We continue to be very active in both local and multi-centre studies. In addition to clinical trials, our nonclinical members have been extremely successful in grant procurement in neuroscience and epidemiology. This year we have featured our Resident Research Program as this is recognized as an important aspect of their training. The Department is working hard to integrate research into the preparation for their future medical careers.

I would like to thank the anesthesiology, surgical and hospital staff for their continued assistance and support. Joel Parlow

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Anesthesiology Research Personnel

Dr. Brian Milne, Director of Clinical Research
Dr. Eric Dumont, Chair, Research Committee
Debbie Dumerton Shore, RN, CCRP, Research Coordinator
Beth Orr, RN, CCRP, Research Nurse
Genevieve Paré, Research Assistant
Lis Andersen, Secretary

"The universe is full of magical things patiently waiting for our wits to grow sharper."

- Jden Phillpots

Research Focus - Dr Elizabeth VanDenKerkhof DrPH



Dr. Elizabeth VanDenKerkhof is an Associate Professor at Queen's University, holding a joint appointment in the Department of Anesthesiology and the School of Nursing, and a cross appointment with the Department of Epidemiology. She is an Ontario Women's Health Council / Canadian Institute of Health Research Mid-Career Scientist which provides 5 years of salary support (2008 – 2013). She is also a Senior Scientist with the Queen's Practice and Research in Nursing group. Elizabeth's research program focuses on understanding the aetiology and impact of acute and chronic pain. She has previously published research on chronic pain, pain prevalence in school children, and health care informatics. She is currently leading a 3 year CIHR funded study examining risk factors for the development of chronic post-surgical pain in women. While on sabbatical from July 2007 to June 2008 she spent time in Scotland and France and worked with the Aberdeen Pain Research Collaboration to study diet and lifestyle risk factors associated with chronic widespread pain. Future studies will examine predictors of chronic pain in the Canadian population and interventions to prevent the development of chronic postsurgical pain. Her secondary research program examines barriers to the adoption of new technology, such as electronic documentation and the Vocera communication system. Elizabeth supervises trainees in anaesthesiology, nursing and epidemiology. She is a registered nurse with a Master of Science degree in Epidemiology from Queen's University and a Doctorate in Public Health from John Hopkins University.

RESIDENCY RESEARCH TRAINING Department of Anesthesiology, Queen's University

Resident Research Coordinators

[Ian Gilron](#), MD, MSc, FRCP(C)
[Elizabeth VanDenKerkhof](#), RN, BScN, MSc,
DrPH
Department of [Anesthesiology](#)
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At Queen's Anesthesiology, research is an integral part of residency training. The principles and practice of anesthesiology are founded upon physiology and pharmacology which have their roots in basic research, and more recently, epidemiological research. Recent revolutions in patient care are results of pioneering research (e.g. muscle relaxants, "quick-offset" anesthetics, regional anesthesia, pulse oximetry). Patient care is facilitated by practice guidelines & consensus recommendations (e.g. advanced cardiac life support (ACLS), difficult airway algorithm) which are based largely on clinical research. Recent major advances in investigative techniques, research funding and global research productivity have provided tremendous opportunities for anesthesia research in Canada. Clinical medicine is not practiced in a vacuum but rather in an ever-changing environment of research and innovation. Anesthesiology training must incorporate research in order for our specialty to advance among the forefronts of medicine. Role models and mentorship are crucial to residency research training and thus requires department-wide faculty involvement. Anesthesiology residents come from diverse backgrounds and identify with faculty with diverse strengths (e.g. clinical, teaching, research, administration). If ALL faculty members emphasize the importance of research, it is much more likely that this message will come across to residents.

Firstly, one needs a structured introduction to the fundamentals of biomedical research (e.g. research methods course) followed by the development and execution of a research project(s). Clinical training is demanding and time consuming; therefore a practical plan and timetable for research project completion is critical. Communication of ideas is vital for research, thus emphasizing the importance of: a) "[resident research day](#)" – a forum for oral presentation of research proposals & results and b) publishing new knowledge in peer-reviewed journals (widespread knowledge translation).

Resident Research Highlights 2008

A randomized controlled trial comparing two doses of spinal bupivacaine for total knee arthroplasty and the impact on recovery time

Devin Sydor MD

Patients with unilateral total knee arthroplasty for osteoarthritis were assigned to receive a lower dose (9mg) or a higher dose (13mg) of spinal isobaric bupivacaine with the same dose of fentanyl and morphine. The primary endpoint was time from arrival to PACU to sensory regression to T12.

Results: 140 patients were randomized to each of two groups

Fifty percent of patients in the lower dose group had achieved sensory regression to T8 upon arrival to PACU compared to 31% of the higher dose group (RR=1.6, 95% CI 1.1, 2.4). Mean time from injection to T12 regression was 2:42h (sd=0:45) vs. 3:17h (sd=0:49) (t=4.2, p<.01).

Discussion: This study demonstrated that lowering the dose of spinal isobaric bupivacaine for unilateral total knee arthroplasty reduced immediate postoperative recovery time by 40 minutes leading to earlier achievement of discharge criteria and the performance of postoperative regional blockade.

[For the full abstract:](#)

Intraperitoneal Ketorolac and Laparoscopic Cholecystectomy

Andrew Lee MD

We hypothesized that intraperitoneal administration of ketorolac (NSAID) alone would be more effective than intravenous ketorolac or placebo in the management of postoperative pain in patients undergoing laparoscopic cholecystectomy.

Results: A total of 120 patients were analyzed (IP=41, IV=39, P=40). Median time to first analgesic was increased from 35 (IQ range 27-49) in the placebo group to 47 mins (IQ range: 40-75; p=0.003) and to 43 mins (IQ range: 30-52; p=0.124) for the IV group and IP group respectively. Median amount of fentanyl in PACU reduced from 0.100 to 0.075 mg for both the IV (p=0.003) and IP groups (p=0.05) versus placebo. There were no significant differences for these parameters between the IP and IV groups.

Discussion: This study demonstrates efficacy for the use of intraperitoneal ketorolac over placebo in the management of immediate postoperative pain in patients undergoing laparoscopic cholecystectomy. These results are comparable to intravenous ketorolac.

[For the full abstract:](#)

Ongoing Studies: 2008

Cardiovascular

Study	Investigator	Status
TRAM Trial – Modified Ultra-filtration in Heart surgery requiring cardiopulmonary bypass	Hamilton/Milne	Complete
Identification and quantification of air emboli in open heart surgery	Milne/Hamilton/Tanzola/Pollard/Lockwood	Ongoing
Canadian Retrospective Activated Factor Villa Trial (CRAFT)	Arellano	Complete

Acute Pain Management

Study	Investigator	Status
RCT of a Meloxicam-Gabapentin combination on evoked versus spontaneous postoperative pain in Laparoscopic Cholecystectomy	Gilron/Mercer	Enrollment complete
A prospective, randomized, double blinded, placebo controlled pilot study assessing the effect of perioperative pregabalin on the incidence of chronic post thoracotomy pain syndrome	Zamora, Turner, Dumerton Shore	Complete
A multicentre prospective randomized double blind placebo controlled trial assessing the effect of perioperative pregabalin on incidence of chronic post thoracotomy pain syndrome	Zamora, Turner, Dumerton Shore	Awaiting funding
Does informational feedback from the administration device affect the quality of patient-controlled analgesia? A randomized controlled trial"	Jeremi Mountjoy/Gilron/Wilson/Murdoch	Just Starting
Systematic review of movement-evoked pain measurement in postoperative analgesic trials	Gilron/Sanjho Srikandarajah	Just Starting

Effects of intraperitoneal Ketorolac on postoperative pain after cholecystectomy	Murdoch/G. Ramsey/Borshch/Saha	Enrollment complete
Individualized Preoperative Preparation for Total Knee Arthroplasty Patients: A randomized controlled trial	Rosemary Wilson	Ongoing
Determining optimal patient controlled epidural analgesia (PCEA) settings in open thoracotomy patients: A randomized controlled trial	Shyam, V., Wilson, RA, Goldstein, DG, VanDenKerkhof, EG, Simchison B, Murdoch J AC	Actively enrolling
RCT of triple non-opioid pharmacotherapy in Postoperative Pain	Gilron/Duggan/Tu/McGrath	Just Starting

Chronic Pain Research

Study	Investigator	Status
RCT of a Gabapentin-Nortriptyline combination in Neuropathic Pain.	Gilron/Tu/Holden/Jackson/Houlden	Complete
Development of a neuropathic pain clinical trial database	Gilron/Rya Boscaroli	Complete
Gender analysis of clinical features & treatment responses in neuropathic pain	Patrick Wong/Gilron	Complete
Functional Impact of Spontaneous and Stimulus-Evoked Pain in Neuropathic Pain Conditions	Gilron	Just Starting
RCT of a Morphine-Nortriptyline combination in Neuropathic Pain	Gilron/Tu/Holden/Jackson/Houlden	Just Starting
Predictors of chronic postsurgical pain in women	VanDenKerkhof/Goldstein/Towheed/Hopman/Wilson/Murdoch/Lam/Harrison/McGrath	Actively Enrolling

Anesthesiology Informatics

Study	Investigator	Status
Computerized database for audit of acute pain patients.	Goldstein/VanDenKerkhof/Rimmer	Ongoing

Bench work

Study	Investigator	Status
Ultra Low Dose Opiate Antagonist and Alpha 2 Antagonist in Spinal Analgesia	Milne/Jhamandas	Ongoing
Attenuation of morphine-induced glial cell activation and tolerance development by ultra-low dose opioid antagonist	Cahill/Milne/Mattioli	Ongoing
An In-Vitro Study of MRI-Related Heating at 3.0 TELSAs of a Flex-tip Plus Epidural Catheter	Patterson/T.Henderson	Pilot complete-waiting funding
Dopamine makes cocaine addictive through D1-increase of AMPA conductances in the bed nucleus of the stria terminalis	Mackenzie-Feder/Bailey/Kuipers/Ianovskia/Schizkoske/Dumont	Ongoing
Physiological properties of bed nucleus of the stria terminalis neurons are nuclei specific.	Shum/MacKenzie-Feder/Dumont	Ongoing
Cocaine-induced plasticity at excitatory synapses in the bed nucleus of the stria terminalis resists to extinction and contributes to relapse	MackenzieFeder/Bailey/Kuipers/Schizkoske/Dumont	Ongoing
Noradrenergic regulation of excitatory transmission in the bed nucleus of stria terminalis	Dumont.EC	Ongoing
The bed nucleus of the stria terminalis is much more than the extension of the amygdale.	Dumont E.C	Ongoing
The role of the calcium channel alpha-2-delta-1 subunit in opioid tolerance	Gilron/ Reimer	Ongoing

Dopaminergic modulation of neuronal activity and synaptic transmission in the bed nucleus of the stria terminalis in rodents	Krawczyk/ Sharma/ Dumont	Ongoing
Effects of long-term psychostimulants or opioids on dopaminergic modulation of synaptic transmission in the bed nucleus of the stria terminalis in rodents	Krawczyk/ Sharma/ Dumont	Ongoing
The role of dopamine in psychostimulants and opioids self-administration in rodents	Chiang/ Dumont	Ongoing
The role of D3 dopamine receptors in drugs of abuse-induced reinforcement in rodents	Iaccino/ Banasikowski, Beninger/Dumont	Ongoing
The role of plasticity of bed nucleus of the stria terminalis excitatory synapses in stress-induced susceptibility to drug dependence in rodents	Ianovskaia/ Dumont	Ongoing
Study of the role of neuroplasticity in the prefrontal cortex in motor impulsivity in rodents	Hayton/ Dumont/ Olmstead	Ongoing
Neurobiological basis of the supraspinal regulation of nociception in rodents	Dumont E.C.	Ongoing

Airway Management

Study	Investigator	Status
Glossopharyngeal and hypoglossal nerve dysfunction following Combitube™ use for a failed obstetric intubation.	Zamora/Saha	Complete
Improving tracheal intubation technique for novices: a standardized assessment of laryngoscope manipulation by experienced laryngoscopists.	Zamora/Harwood	Complete
Cervical spine movement during laryngoscopy: objective assessment and comparisons of indirect fiberoptic and prismatic laryngoscopes.	Zamora /Nolan/Sumit Sharan	Complete

Other

Study	Investigator	Status
Risk and Prevalence of Pressure Ulcers in Acute Care: 10 year Longitudinal Study	Harrison/Friedberg/ VanDenKerkhof	Complete
Low Dose Spinal Bupivacaine for total knee arthroplasty and Recovery Room wait time	Sydor/Engen/Jaeger	Enrollment complete
Development of a Useful Questionnaire for Determining which Children need Preoperative sedation	Ashbury/ Milne/ McVicar	Ongoing
Anesthesia for Laser Therapy for Proliferative Retinopathy of Prematurity: General Anesthesia versus Sedation	Ashbury/Gibson	Ongoing
Determination of the Obstacles to Entering Data in the Resident Log Book	Ashbury/ Ho/ Endersby	Complete
Role of Carbon Monoxide in Satisfying Craving for Cigarette Smoke	Nakatzu/ Milne	Ongoing
Ringer's Lactate for the dilution of AS-3 anticoagulated packed red cells	VanVlyment/ Parlow/ Albert	Ongoing
Transdermal dantrolene for the treatment of chronic myofascial pain and muscle spasm associated with multiple sclerosis and cerebral palsy	Henry	Ongoing
Anesthesia Assistant Survey Study	Engen	Starting soon
The safety and efficacy of the anesthesia care team	Engen	Starting soon
The CaRM's Game: What Factors Influence Anesthesia Applicants rank list	Ridi/ Patterson/ Jaeger	Ongoing

Full Papers 2008:

1. Karkouti K., Beattie WS., **Arellano R.**, Aye T., Bussieres JS., Callum JL., Cheng D., Heinrich L., Kent B., Lee TW., MacAdams C., Mazer CD., Muirhead B., Rochon AG., Rubens FD., Sawchuk C., Wang S., Waters T., Wong BI., Yau TM. Comprehensive Canadian review of the off-label use of recombinant activated factor VII in cardiac surgery. *Circulation*. 118(4):331-8, 2008
2. Fergusson DA., Hebert PC., Mazer CD., Fremes S., MacAdams C., Murkin JM., Teoh K., Duke PC., **Arellano R.**, Blajchman MA., Bussieres JS., Cote D., Karski J., Martineau R., Robblee JA., Rodger M., Wells G., Clinch J., Pretorius R. BART Investigators: A comparison of aprotinin and lysine analogues in high-risk cardiac surgery. *New England Journal of Medicine*. 358(22):2319-31, 2008
3. Morano TJ, Bailey NJ., **Cahill CM** and **Dumont EC**. Nuclei- and condition-specific responses to pain in the bed nucleus of the stria terminalis. *Progress in Neuropsychopharmacology and Biological Psychiatry* 32 (2008) 643–650.
4. **Dumont EC.**, Rycroft BK., Maiz J., and Williams JT. Morphine produces circuit-specific neuroplasticity in the bed nucleus of the stria terminalis. *Neuroscience* 153 (2008) 232–239.
5. **Erb J.**, Orr E., Mercer CD., **Gilron I**. Interactions between pulmonary performance and movement-evoked pain in the immediate postsurgical period: Implications for perioperative research and treatment. *Reg Anesth Pain Med*. 2008 Jul-Aug;33(4):312-9
6. **Froese A**. Anesthesia and the role of short-term service delivery in developing countries. *Canadian Anaesthetists' Society Journal*, 2007;54:940-946
7. Chen C-H., Boag AH., Beiko DT., Siemens DR., **Froese A.**, Isotalo PA. Composite paraganglioma-ganglioneuroma of the urinary bladder: a rare neoplasm causing hemodynamic crisis at tumour resection. *Canadian Urological Association Journal*. In press.
8. **Gilron I.**, Coderre TJ. Emerging drugs in neuropathic pain. *Expert Opinion in Emerging Drugs* 2007;12(1):113-26
9. Boscarol R., **Gilron I.**, Orr E. Chronobiological characteristics of postoperative pain: diurnal variation of both static and dynamic pain and effects of analgesic therapy. *Can J Anaesth* 2007;54:696-704.
10. Greenspan JD, Coghill RC, **Gilron I**, Sarlani E, Veldhuijzen DS, Lenz FA. Quantitative somatic sensory testing and functional imaging of the response to painful stimuli before and after cingulotomy for obsessive-compulsive disorder (OCD). *Eur J Pain*. 2008;12(8):990-999
11. **Gilron I**. Analgesia controlled with patience: towards a better understanding of analgesic self-administration behaviour. *Can J Anaesth*. 2008 Feb;55(2):75-81.
12. **Gilron I**. Optimizing neuropathic pain pharmacotherapy: add on or switch over? *Nature Clinical Practice. Neurology* 2008;4(8):414-415 (Editorial)
13. **Gilron I**, Orr E, Tu D, Mercer CD, Bond D. A randomized, double-blind, controlled trial of perioperative administration of gabapentin, meloxicam and their combination for spontaneous and movement-evoked pain after ambulatory laparoscopic cholecystectomy. *Anesthesia & Analgesia (In Press)* 2009.
14. Lynch ME., Campbell FA., Clark AJ., Dunbar MJ., **Goldstein D.**, et al. Waiting for treatment for chronic pain – a survey of existing benchmarks: Toward establishing evidence-based benchmarks for medically acceptable waiting times. *Pain research & management: the journal of the Canadian Pain Society = journal de la societe canadienne pour le traitement de la douleur*, 2007;12:245-248
15. Wyllie M., **Henry R.**, et al. Intravesical alkalized lidocaine (PSD597) offers sustained relief from symptoms of interstitial cystitis and painful bladder syndrome. *British Journal of Urology (BJU-2008-0885)*
16. **Milne B.**, Sutak M., **Cahill CM.**, **Jhamandas K**. Low doses of A₂-adrenoceptors antagonists augment spinal morphine analgesia and inhibit development of acute and chronic tolerance. *British Journal of Pharmacology*. 155: 1264-1278, 2008
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18. **Parlow JL.**, **van Vlymen JM**. The Methylene Blues: Anticipating adverse reactions to non-anesthetic drugs. *Canadian Journal of Anesthesiology* 2008; 55: 1-5.

19. Gratadour P., Cividjian A., Sagnard P., **Parlow JL.**, Viale JP., Quintin L. Unusual sinus arrhythmia. *International Journal of Cardiology*, 2007; Aug:17-18
20. Yang H., Roberts R., **Parlow JL.** Letter to the editor. *American Heart Journal*, 2007;158:e19-e19
21. Hua LPT., Brown CA., Hains SJM. Godwin M., **Parlow J.** Effects of Low Intensity exercise conditioning on blood pressure, heart rate and autonomic modulation of heart rate in men and women with hypotension. *Biological research for nursing*, 2008
22. **Tanzola R., Allard R.,** Hamilton A. Intraoperative Transesophageal Echocardiography Ventricular Lipoma, 2008, *Anesthesia and Analgesia*, In press.
23. Harrison MB., Graham ID., Lorimer K., **VanDenKerkhof EG.**, Buchanan M., Wells PS., Brandys T., Tadeusz P. Nurse clinic versus home delivery of evidence-based community leg ulcer care: A randomized health services trial. *BMC Health Services Research*, 2008:243.
24. Donovan T., Moore K., **VanDenKerkhof EG.** Employee absenteeism based on occupational health visits in an urban territory care Canadian hospital. *Public Health Nursing*, 2008 "25(6)" 565-575.
25. Van Dijk A., Pickett W., McGrath P., **VanDenKerkhof EG.**, Pain and self reported health in Canadian children. *Pain Research and Management*, 2008: 13(5):407-412.
26. Girouard K., Harrison M., **VanDenKerkhof EG.** The symptom of pain with pressure ulcers: A review of the literature. *Ostomy Wound Management*, 2008:54(5):30-49.
27. Szpiro KA., Harrison M., **VanDenKerkhof EG,** LougheedMD. Patient education in the emergency department: A systematic review of interventions and outcomes. *Advanced Emergency Nursing Journal* 2008:30(1):34-49.
28. Hopman WM., Harrison MB., Coo H., Freidberg E., Buchanan M., **VanDenKerkhof EG.** The Impact of Chronic Disease and Increased Age on Physical and Mental Health Status, *Chronic Diseases in Canada*, in press Oct 2008.
29. Szpiro KA., Harrison MB., **VanDenKerkhof EG.**, Lougheed MD. Asthma education in delivered in an emergency department and an asthma education center: A feasibility study, *Advanced Emergency Nursing Journal*, in press May 2008.
30. **VanDenKerkhof EG.**, Hall S., Wilson R., Gay A., Duhn L. Evaluation of an Innovative Communication Technology in an Acute Care Setting, *Computers Informatics in Nursing*, in press April 2008.
31. **van Vlymen JM.** (POISE trial): Effects of extended-release metoprolol succinate in patients undergoing non-cardiac surgery: a randomized controlled trial. POISE Study Group. *Lancet*. 2008; 371: 1839-1847
32. Messenger DW., Murray HE., Dungey PE., **van Vlymen JM.**, Sivilotti ML. Sub dissociative-dose ketamine versus fentanyl for analgesia during propofol procedural sedation: a randomized, clinical trial. *Academic Emergency Medicine* 2008; 15:877:86.
33. Albert K., **van Vlymen JM.**, James P., **Parlow JL.** Ringer's lactate is compatible with the rapid infusion of AS-3 preserved packed red blood cells. *Canadian Journal of Anesthesiology* In Press
34. **Zamora JE., Saha T.** Combitube™ rescue for Cesarean delivery followed by ninth and twelfth cranial nerve dysfunction. *Can J Anesth* 2008 55: 779-784.

Abstracts/Presentations 2008:

1. **Burjorjee JE.** Self reported development in CanMEDS roles through high-fidelity Anesthesiology Simulation Sessions. *International Conference on Residency Education, Horizons: The future Residency Education*, 2008.
2. Morano TJ, Bailey NJ., **Cahill CM** and **Dumont EC.** Nuclei- and condition-specific response to pain in the bed nucleus of the stria terminalis. 28th Annual Anesthesiology Research Day 2007.
3. Morano TJ, Bailey NJ., **Cahill CM** and **Dumont EC.** Nuclei- and condition-specific response to pain in the bed nucleus of the stria terminalis. 29th Annual Anesthesiology Research Day 2008.

4. Morano TJ, Bailey NJ., **Cahill CM** and **Dumont EC**. Nuclei- and condition-specific response to pain in the bed nucleus of the stria terminalis. 3rd Center for Neurosciences Studies Annual Research Day 2007.
5. **Duggan S**, **Wang L**, **Milne B**, Hong M., Hall S. Reserpine prevents CVS dysfunction after raised ICP in rats. Canadian Anesthesiologists' Society Annual Meeting, 2007.
6. Kuipers MJ., Schizkoske A., Ianovskaia D., **Dumont EC**. Dopamine in the bed nucleus of the stria terminalis contributes in reward-seeking behaviours. 38th annual meeting of the Society for Neuroscience annual meeting, November 15-19, Washington, DC, USA, 2008.
7. Mackenzie-Feder J., Bailey NJ., **Dumont EC**. Cocaine self-administration changes D2-dopaminergic modulation of synaptic transmission in the bed nucleus of the stria terminalis. 38th annual meeting of the Society for Neuroscience annual meeting, November 15-19, Washington, DC, USA, 2008.
8. Hayton SJ., **Dumont EC**., Olmstead MC. Shift of synaptic weighting in the medial prefrontal cortex following training in a simple response inhibition task. 38th annual meeting of the Society for Neuroscience annual meeting, November 15-19, Washington, DC, USA, 2008.
9. Hayton SJ., Olmstead MC., **Dumont EC**. Acquisition of response inhibition produces shift of synaptic strength. An engram for executive control? 29th Annual Anesthesiology Research Day, 2008.
10. Kuipers MJ., Schizkoske A., Ianovskaia D., **Dumont EC**. Dopamine in the bed nucleus of the stria terminalis is critical in the reinforcement produced by natural or pharmacological rewards. 2nd Annual Canadian Neuroscience Meeting, May 25-28, Montreal, Qc, Canada, 2008.
11. Kuipers MJ., Schizkoske A., Ianovskaia D., **Dumont EC**. Dopamine in the bed nucleus of the stria terminalis is critical in the reinforcement produced by natural or pharmacological rewards. 29th Annual Anesthesiology Research Day 2008.
12. Mackenzie-Feder J., Bailey NJ., **Dumont EC**. Dopamine produces bidirectional modulation of synaptic transmission in the bed nucleus of the stria terminalis. 29th Annual Anesthesiology Research Day 2008.
13. Mackenzie-Feder J., Bailey NJ., **Dumont EC**. Bidirectional modulation of excitatory transmission by dopamine in the bed nucleus of the stria terminalis. 2nd Annual Canadian Neuroscience Meeting, May 25-28, Montreal, Qc, Canada, 2008.
14. Sharma R., Krawczyk M., Kuipers M., Ianovskaia D., Iaccino R., Schizkoske A., **Dumont E**. Cocaine self-administration alters dopaminergic modulation of excitatory transmission in the bed nucleus of the stria terminalis. 4th Annual center for Neuroscience Studies Research Day 2008.
15. Krawczyk M., Sharma R., **Dumont E**. Cocaine self-administration alters dopaminergic modulation of inhibitory transmission in the bed nucleus of the stria terminalis. 4th Annual center for Neuroscience Studies Research Day 2008.
16. Mackenzie-Feder J., Bailey NJ., Phelan R., Schizkoske A., Georges F., **Dumont E**. Dopamine makes cocaine addictive through D1-increase of AMPA conductances in the bed nucleus of the stria terminalis. 3rd Annual Center for Neurosciences Studies Annual Research Day 2007
17. Boscarol R., **Gilron I**, Orr E. Chronobiological characteristics of postoperative pain: diurnal variation of both static and dynamic pain and effects of analgesic therapy. Canadian Journal of Anesthesia May 2007; #44272.
18. Delva N., The Canadian ECT Survey Associates (including **Gilron I**). The Geographic Distribution of ECT Services in Canada. Canadian Psychiatric Association Abstracts 2007; Abstract #P46.
19. Chan P., Delva N., Enns MW., Ferguson J., **Gilron I**., Gosselin C., Graf P., Jewell M., Lawson S., Martin B., Milev R., Patry S. The Geographic Distribution of ECT Services in Canada. Abstracts From the 18th Annual Meeting of the ACT. Journal of ECT 2008; 24:103-106.
20. **Gilron I**., Wong P., Bailey JM. A Gender-Based Analysis Of Clinical Features And Treatment Patterns In Neuropathic Pain. 12th World Pain Congress Abstracts, 2008;1:949.
21. **Jhamandas KH**., **Milne B**., Sutak M. Induction of thermal hyperalgesia by low dose spinal morphine and its implications for the development of tolerance. Neurosciences Abstracts, 2007;922:13/0023
22. **Milne B**., Sutak M., Jhamandas K., Low dose alpha2 antagonist enhances rat norepinephrine analgesia. Canadian Journal of Anesthesia 2008;55:460625-460625

23. Abul-Husn NS., Sutak M., **Milne B.**, **Jhamandas K.** Augmentation of spinal morphine analgesia and inhibition of tolerance by low doses of mu and delta receptors antagonists. *British Journal of Pharmacology* 151:877-887, 2007
24. Mattioli TM., Sutak M., **Milne B.**, **Jhamandas K.**, **Cahill CM.** Non-stereoselective effects of the ultra-low dose opioid receptor antagonist on attenuating opioid analgesic tolerance. *Neurosciences* HH6 270.7 2008.
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26. **Parlow J.**, **Gilron I.**, **Milne B.** A pilot study of Gabapentin blood levels and feasibility of Use in cardiac surgery. *Canadian Journal of Anesthesia = Journal Canadien d'Anesthésia*, 2008;55:471896-471896
27. **Parlow J.**, **Milne B.**, **Gilron I.**, Shore D., Orr E. Gabapentin Pharmacokinetics And Feasibility In Cardiac Surgery. *Canadian Journal of Anesthesia* 55:471896 2008.
28. Albert K., **Parlow J.**, **van Vlymen JM.**, James P. Compatibility of Ringer's Lactate with AS-3 packed Red Blood Cells. *Canadian Journal of Anesthesiology* 2008 ; 55: 473575 (abstract).
29. Subocz EG., **VanDenKerkhof EG.**, Hopman WM., Towheed TE., **Goldstein DH.**, Wilson RA., Harrison MB., Lam M., McGrath P., Johnston S., **Gilron I.**, Medd J. A Pilot Study Assessing Pain and Health-Related Quality of Life in Women after Cesarean Section. *Placenta*, 2007;28(8-9):A45
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31. Wilson R, Goldstein DH, **VanDenKerkhof EG.** Audit of an Acute Pain Management Service: 2006-08. Submitted to the Canadian Pain Society Annual Meeting, Quebec City, May 2009.
32. **VanDenKerkhof EG.** Jones GT, Power C, Reid DM, Mavroei A, Macdonald HM, Macfarlane GJ. Why do persons with chronic widespread pain have higher mortality from cancer and cardiovascular disease? The role of diet and lifestyle. American College of Rheumatology annual meeting, San Francisco, Oct. 2008.
33. **VanDenKerkhof EG.** Jones GT, Reid DM, Mavroei A, Macfarlane GJ, Macdonald HM. Why do people with CWP have an increased risk of cancer and cardiovascular disease? The role of nutritional intake, body mass and physical activity in postmenopausal women. Aberdeen Pain Research Collaboration, Epidemiology Group, Dept. of Public Health. University of Aberdeen. World Congress of Pain, Glasgow, UK, August 2008.
34. Haley TA, Tripp DA, **VanDenKerkhof EG.** McAlister M, Hsieh AY. Effects of depressive symptoms on pain-related healthcare visits and medication use, *Pain Research and Management* 2008;13(2):135.
35. **VanDenKerkhof EG.** Jones GT, Reid DM, Mavroei A, Macfarlane GJ, Macdonald HM. Why do people with CWP have an increased risk of cancer and cardiovascular disease? The role of nutritional intake, body mass and physical activity in postmenopausal women. Aberdeen Pain Research Collaboration, Epidemiology Group, Dept. of Public Health. University of Aberdeen. British Pain Society Annual Meeting, Liverpool, UK, April 2008.
36. **VanDenKerkhof EG.** Macdonald HM, Jones GT, Power C, Macfarlane MJ. Why do persons with chronic widespread pain have higher mortality from cancer and cardiovascular disease? Results from the 1958 birth cohort study. British Pain Society Annual Meeting, Liverpool, UK, April 2008 (first prize).
37. **VanDenKerkhof EG.** Macdonald HM, Jones GT, Power C, Macfarlane MJ. Why do persons with chronic widespread pain have higher mortality from cancer and cardiovascular disease? Results from the 1958 birth cohort study. British Rheumatology Society Annual Meeting, Liverpool, UK, April 2008.
38. **VanDenKerkhof EG.** British Pain Society – First prize poster competition, 2008.

Presentations/ Lectures

1. **Dumont EC.** A lost mesolimbic pathway: dopamine in the bed nucleus of the stria terminalis and its role in cocaine addiction. Department of Anesthesiology and Pharmacology, University of British Columbia, September 24, 2008 (Host: Dr. Stephanie Borgland)

2. **Dumont EC.** Neurophysiology of the extended amygdala: cellular, systems, and behavioural data. Department des Sciences Biologiques, Université de Montréal, February 4, 2008 (Hosts: Drs. Therese Cabana and Jean-Francois Pfioger)
3. **Gilron I.** Combination drug therapy for neuropathic pain. Presented at the 2nd International Neuropathic Pain Special Interest Group Congress, Berlin, Germany June 2007.
4. **Gilron I.** Combination pharmacotherapy for the management of pain. American Conference on Pain Medicine, New York City, USA April 2008.
5. **Gilron I.** Combination pharmacotherapy for the management of pain. American Pain Society Annual Meeting, Tampa, USA May 2008.
6. **Gilron I.** Proof-of-concept Clinical Trials. Presented at the 8th Annual I.M.M.P.A.C.T. Meeting, Arlington, USA June 2008.
7. **Gilron I.** "It hurts when I do this: Mechanisms and management of movement-evoked postoperative pain. Presented at the Nuffield Department of Anaesthetics, Oxford University, Oxford, UK October 2008.
8. **Gilron I.** The Role of Anticonvulsants in the Management of Postoperative Pain. Presented at the Canadian Pain Society Annual Meeting, May 2008.
9. **Gilron I.** Clinical trial methodologies for the evaluation of drug combinations. Presented at Queen's University Department of Community Health and Epidemiology Seminar, March 2008.
10. **VanDenKerkhof EG.** Do persons with chronic widespread pain have lifestyles that put them at high risk of cardiovascular disease and cancer? The role of diet & lifestyle. Dept of Pharmacology, Queen's University, December 2008.
11. **VanDenKerkhof EG.** Do persons with chronic widespread pain have lifestyles that put them at high risk of cardiovascular disease and cancer? The role of diet & lifestyle. Research Symposium for Nursing Alumni and Friends, Queen's University, September 2008.
12. **VanDenKerkhof EG.** Sabbatical Flashbacks. Grand Rounds, Dept of Anesthesiology, Queen's University, September 2008.
13. **VanDenKerkhof EG.** Advancing Health Informatics Research: The Imperative of End-User Involvement, Nursing Research Council of Southeastern Ontario Health Science Centre Nursing Research Conference, Kingston, Ontario, June 2008.
14. **VanDenKerkhof EG.** Evaluation of an Innovative Communication Technology in an Acute Care Setting, COACH, Vancouver, May 2008.
15. **VanDenKerkhof EG.** Why do persons with chronic widespread pain have higher mortality from cancer and cardiovascular disease? Results from the 1958 birth cohort study. British Pain Society Annual Meeting, Liverpool, UK, April 2008 (first prize poster – invited presentation).

Invited Reviews/ Editorials/ Letters, 2008:

1. **Gilron I.** Analgesia controlled with patience: towards a better understanding of analgesic self-administration behaviour. Can J Anaesth. 2008 Feb;55(2):75-81.
2. **Gilron I.** Optimizing neuropathic pain pharmacotherapy: add on or switch over? Nat Clin Pract Neurol. 2008 Jun 17. [Epub ahead of print].

Patents 2008:

1. US Patent Application. Serial No. 60/985,854. Secretain F, Pollard A, Ball C, Uddin M, **Ali M., Milne B.,** Hamilton A. Method and system for identifying and quantifying particles in flow systems. Filed 6 November 2008.

Awards and Grants 2008

1. **Dumont EC** - CIHR operating grant (MOP-79277); Stress and cocaine interact at excitatory synapses in the bed nucleus of the stria terminalis; \$358,392.00 (04/2006-03/2010)
2. **Dumont EC** - NSERC discovery grant; Neurobiological basis of the supraspinal regulation of nociception; \$132,500.00 (04/2008-03/2013)

3. **Dumont EC** - CFI Infrastructure Operating Funds; Infrastructure for research on the emotional aspect of pain: \$30,000.00 (09/2006-08/2011)
4. **Dumont EC** - Queen's University Advisory Research Committee; Neurobiological basis of supraspinal regulation of nociception: a study of pain-induced neuronal activity in the bed nucleus of the stria terminalis (\$2,080.00; 04/2008-03/2009)
5. **Dumont EC** - Queen's University Principal's Development Fund (Dr. Michael Dorris co-applicant); Visit of Dr. Carol Colby to Queen's University (\$1,860.00; 09/2008-07/2009)
6. **Gilron I** – Physician Services Inc. Foundation, Operating Grant. Trial methodology comparing triple to double non-opioid therapy for postoperative movement-evoked pain. Role: Principal Investigator. Total amount: \$101,500.00
7. **Gilron I** – CIHR Industry-Partnered (Pfizer) Mid-Career Investigator Salary Award. Combination pharmacotherapy for the management of pain. Role: Principal Investigator. Total amount: \$350,000.00
8. **Gilron I** - CIHR Randomized Clinical Trials Operating Grant. Combination pharmacotherapy for the management of pain (2008). Role: Principal Investigator. Total amount: \$496,022.00
9. **VanDenKerkhof EG** – CIHR Ontario Women's Health Council / IGH Mid-Career Award, \$425,000, 2008-2013.
10. **VanDenKerkhof EG**: Co-investigators: Bruce J (Scotland), Peters M (The Netherlands) - International Strategic Opportunities Program, Ontario Ministry of Research and Innovation, \$150,000 (\$50,000 confirmed, \$100,000 pending). International Chronic Postsurgical Pain Collaboration, September 2008.
11. **VanDenKerkhof EG** - Principal's Development Fund, Queen's University, \$7,100. New International Research Collaborations, 2008-2009.
12. **VanDenKerkhof EG** - Research Development Fund, Queen's University, School of Nursing, \$1,500. International Chronic Postsurgical Pain Collaboration, 2008.
13. **Zamora, JE., Turner KE., Shore D.** - CTAQ Endowment Fund. A prospective, randomized, double-blind, placebo controlled pilot study assessing the effect of perioperative pregabalin on the incidence of chronic post thoracotomy pain syndrome \$14,000

Grants Submitted

1. **Burjorjee J.**, et al – CPSI Grant. Developing a National Anesthesia Postgraduate Simulation Curriculum incorporating CanMEDs Roles & Patient Safety Competencies
 2. **Dumont EC** - The Harry Botterell Foundation; \$10,000.00
 3. **Dumont EC** - OMRI-Early Researcher Award; \$150,000.00
 4. **Dumont EC** - NARSAD Young Investigatory Award 2009; \$59,998.00
 5. **Dumont EC** - CIHR Catalyst Grant: Prevention and treatment of illicit substance use; \$100,000.00
 6. **Dumont EC** - CIHR New Investigator Award; \$250,000.00
 7. **Gilron I** - CIHR Operating Grant. Cardiovascular outcomes of drug treatment for neuropathic pain and fibromyalgia. Role: Co-Principal Investigator (together with Dr. Linda Levesque). Total amount: \$185,046.00
 8. **Zamora JE., Turner KE., Dumerton Shore D.** – Physicians Services Incorporated Foundation. A multi-centre, prospective, randomized, double-blind, placebo controlled study assessing the effect of perioperative Pregabalin on the incidence of Chronic Post Thoracotomy pain syndrome \$142,795
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