

**ANDREW McRAE MD, PhD, FRCPC**  
**amcrae@ucalgary.ca**



**Date: March 26, 2018**

**Education**

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*Degrees*

- Doctor of Philosophy. Dept. of Epidemiology and Biostatistics. University of Western Ontario, London ON. Sept. Doctoral Dissertation: An empirical and philosophical analysis of ethical problems in cluster randomization trials. Supervisors: Drs. Charles Weijer and Allan Donner. 2011.
- Doctor of Medicine. Dalhousie University, Halifax NS. 2002.
- Bachelor of Science (Medical). Dalhousie University, Halifax NS. Thesis Project: Ethics Problems in Emergency Medicine Research. Supervisor : Dr. Charles Weijer. 2002.
- Bachelor of Science. Dept. of Microbiology and Immunology. Minor in Religious Studies. McGill University, Montreal QC. Graduated with Great Distinction. 1998.

*Postgraduate Training*

- Royal College of Physicians of Canada Training Program in Emergency Medicine. Department of Emergency Medicine. Queen's University, Kingston, ON. 2002-2007.

*Professional Certification*

- Fellow of the Royal College of Physicians of Canada. Specialty Certification in Emergency Medicine. 2007.
- Licentiate of the Medical Council of Canada. 2003.
- Advanced Cardiac Life Support Instructor, American Heart Association. 2004.
- Advanced Trauma Life Support Instructor, American College of Surgeons. 2004. ATLS ID #287692
- Pediatric Advanced Life Support Provider, American Heart Association and American College of Pediatrics. 2002.

## **Academic Appointments**

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- Member, Rotman Institute of Philosophy, Department of Philosophy, Western University. London, ON. 2011-Present.
- Member, Institute for Population Health, University of Calgary, 2011-Present
- GFT Assistant Professor. Department of Emergency Medicine. University of Calgary. Calgary, AB. 2013-Present
- Clinical Assistant Professor. Division of Emergency Medicine, Department of Family Medicine. University of Calgary. Calgary, AB. 2010-2013
- Research Director. Division of Emergency Medicine, Department of Family Medicine. University of Calgary. Calgary, AB. 2010-Present.
- Assistant Professor. Division of Emergency Medicine, Department of Medicine. University of Western Ontario. London, ON. September 2007-2010.
- Assistant Professor. Department of Emergency Medicine. Queen's University, Kingston, ON. July-September 2007.

## **Clinical Appointments**

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- Attending Emergency Physician. Calgary Zone, Alberta Health Services. Calgary, AB. December 2010-Present.
- Trauma Team Leader. London Health Sciences Centre. London, ON. 2009-2010.
- Attending Emergency Physician. London Health Sciences Centre and Saint Joseph's Health Centre. London, ON. 2007-2010.
- Attending Emergency Physician, Trauma Team Leader, and RACE Team Physician. Kingston General Hospital. Kingston, ON. July-September 2007.
- Locum Emergency Physician. Sussex Health Centre, Atlantic Health Sciences Corporation. Sussex, NB. December 2004 and December 2005.

## **Academic Awards**

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- Grant Innes Award for Best Research Abstract/Presentation. Canadian Association of Emergency Physicians (2016)
- Western Graduate Research Scholarship. Univ. of Western Ontario (2006-2009)
- Ontario Graduate Scholarship (Declined) (2007, 1998)
- Dr. Robert F. Scharf Award in Emergency Medicine. Dalhousie University (2002)

- Canadian Bioethics Society Student Abstract Award (2001)
- Associated Medical Services, Inc. Bioethics Studentship (2000)
- Dalhousie University Faculty of Medicine Scholarship (2001)
- Ross Stewart Smith Medical Scholarship, Dalhousie University (2000)
- William Isaac MacDougall Scholarship, Dalhousie University (1999)
- Natural Sciences and Engineering Research Council of Canada Postgraduate Scholarship (Declined) (1998)
- McConnell Award, McGill University (1996-97)
- Dean's Honour List, McGill University (1994-95 and 1996-97)

## Research Funding

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### *Salary Awards*

1. Canadian Institutes of Health Research Fellowship Award (\$50000/annum salary support, \$5000/annum research funding). 2007-2011.

### *Peer-reviewed Grants as Principal Investigator*

1. Risk prediction tools for emergency department patients with acute heart failure. Alberta Health Services Emergency Strategic Clinical Network. \$5000. 2016-17.
2. Empirical Validation of Emergency Department Crowding Metrics. Canadian Institutes of Health Research Open Operating Grant. \$197,087. April 2014-March 2016.
3. Prediction of mortality and adverse cardiac outcomes with highly sensitive troponin T assays. Canadian Institutes of Health Research Open Operating Grants Competition. \$169,530. October 2013-September 2015.
4. Developing a Research Agenda in Emergency Medicine Education Research. Principal Applicant. Alberta Innovates Health Solutions Conference Grant. \$5000. 2012.

### *Peer-reviewed Grants as Co-Investigator*

1. Understanding frequent emergency department visitors in Alberta and Ontario through advanced statistical modeling techniques. PI: Scott Fielding and Rhonda Rosychuk. CIHR Secondary Analysis Operating Grant. \$70,000. 2018-19.
2. A randomized, controlled comparison of electrical versus pharmacological cardioversion for emergency department patients with recent-onset atrial fibrillation. PI: Jeffrey Perry. CIHR Open Operating Grant. \$909,000. 2015-2018.
3. Enhanced Multidisciplinary Care for Inner City Patients with High Acute Care Use. PI: Ginetta Salvalaggio. Alberta Innovates-Health Solutions PRIHS competition. \$750,000. 2015-18.

4. Reassessment of Clinical Practices for Patient Presenting to the Emergency Department with Upper Gastrointestinal Bleeding. PI: Eddy Lang. Alberta Innovates-Health Solutions PRIHS competition. \$750,000. 2015-18.
5. Improving Diagnostic Imaging Stewardship In Alberta Emergency Departments. PI: Eddy Lang. Alberta Innovates-Health Solutions PRIHS competition. \$750,000. 2014-17.
6. Canadian Atrial Fibrillation Stroke Prevention Intervention Network. PI: Jeff Healey. Canadian Institutes of Health Research ICRH Emerging Network Grants. \$4,500,000. 2014-19.
7. A Study to Derive a Clinical Decision Rule to Predict Short Term Cardiac Outcomes in Adult Syncope Patients after ED Discharge. Site Investigator. PI: Venkatesh Thiruganasambandamoorthy. Operating Grant, Canadian Institutes of Health Research. \$242042. 2011-2014.
8. Helmet use and risk factors for injury among skiers and snowboarders. Co-Investigator. PI: Brent Hagel. Operating Grant, Alberta Children's Hospital Research Institute. \$48000. 2012-2014.
9. International dissemination of the Ottawa Statement on the Ethical Conduct and Ethics Review of Cluster Randomized Trials. Co-Investigator. PI: Monica Taljaard. Canadian Institutes of Health Research Dissemination Grant. \$50000. 2012

#### Other Grant Funding

1. Validation of Emergency Department Diagnostic Strategies for Acute Coronary Syndromes Using a High-Sensitivity Troponin T Assay. Unrestricted Research funds, Roche Diagnostics Canada. \$95, 000. Co-investigator. PI: James Andruchow. 2014-16

#### Publications and Presentations

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##### *Published Peer-reviewed Papers*

1. Senior K, Burles K, Wang D, Grigat D, Innes GD, Andruchow JE, Lang ES, **McRae AD**. Age-adjusted D-dimer thresholds in the investigation of suspected pulmonary embolism: A retrospective evaluation in patients aged 50 or older using administrative data. *CJEM*. 2018. Manuscript accepted Feb 22, 2018.
2. Andruchow JE, Kavsak P, **McRae AD**. Contemporary emergency department management of patients with chest pain: A concise review and guide for the high-sensitivity troponin era. *Can J Cardiol*. 2018;34:98-108.

3. **McRae AD**, Perry JJ, Brehaut J et al. Engaging emergency clinicians in emergency department clinical research. *CJEM*. 2018 Jan 30:1-5. Doi 10.1017/cem.2017.434.
4. Stiell IG, Perry JJ, Brehaut J, Brown E, Curran JA, Emond M, Hohl C, Taljaard M, **McRae AD**. How to conduct implementation trials and multicenter studies in the emergency department. *CJEM* 2018. 2018 Jan 30:1-5. Doi 10.1017/cem.2017.433.
5. Kavsak PA, Worster A, Shortt C, Ma A, Clayton N, Sherbino J, Hill SA, McQueen M, Griffith LE, Mehta SR, **McRae AD**, Devereaux PJ. Performance of high-sensitivity cardiac troponin in the emergency department for myocardial infarction and a composite cardiac outcome across different estimated glomerular filtration rates. *Clin Chem Acta*. 2018;479:166-170.
6. Michaud AM, Parker SIA, Ganshorn H, Ezekowitz JA, **McRae AD**. Prediction of early adverse events in emergency department patients with acute heart failure: A systematic review. *Can J Cardiol*. 2018;34:168-79.
7. Thiruganasambandamoorthy V, Stiell IG, Sivilotti MLA, Rowe BH, Mukarram M, ARCot K, Kwong K, **McRae AD**, Wells GA, Taljaard M. Predicting short-term risk of arrhythmia among patients with syncope: the Canadian Syncope Arrhythmia Risk Score. *Acad Emerg Med*. 2017;11:1315-26.
8. **McRae AD**, Innes G, Graham M et al. Undetectable concentrations of an FDA-approved high-sensitivity cardiac Troponin T assay to rule out acute myocardial infarction at emergency department arrival. *Acad Emerg Med*. 2017; 24:1267-1277.
9. **McRae AD**, Innes G, Andruchow J, et al. Comparative evaluation of 2-hour rapid diagnostic algorithms for acute myocardial infarction using high-sensitivity cardiac troponin T. *Can J Cardiol*. 2017;33:1006-1012.
10. Yu AYX, Quan H, **McRae AD**, Wagner GO, Hill M, Coutts SB. A cohort study on physician documentation and the accuracy of administrative data coding to improve passive surveillance of transient ischemic attacks. *BMJ Open*. 2017;7:e015234.
11. Yu AYX, Quan H, **McRae AD**, Wagner GO, Hill M, Coutts SB. Moderate sensitivity and high specificity of emergency department administrative data for transient ischemic attacks. *BMC Health Serv Res*. 2017;17:666.
12. Burles K, Innes G, Senior K, Lang E, **McRae AD**. Limitations of Pulmonary Embolism ICD-10 Codes in Emergency Department Administrative Data: Let The Buyer Beware. *BMC Med Res Methodology*. 2017; 17:89.
13. Clinkard D, Stiell I, Lang E et al. Between- and within-site variation in medication choices and adverse events during procedural sedation for electrical cardioversion of atrial fibrillation and flutter. *CJEM*. 2017 Jun 7:1-7. Epub ahead of print. doi 10.1017/cem.2017.20.

14. Stiell IG, Perry JJ, Clement CM et al. Prospective and explicit clinical validation of the Ottawa Heart Failure Risk Scale, with and without use of quantitative NT-proBNP. *Acad Emerg Med.* 2017;24:316-27.
15. Lenz K, **McRae A**, Wang D et al. Slow or swift, your patient's experience won't drift: absence of correlation between physician productivity and patient experience. *CJEM.* 2016; Nov 7:1-9.
16. Innes GD, Scheuermeyer FX, Law MR, **McRae AD** et al. Sex-related differences in emergency department renal colic management: females have fewer computed tomography scans but similar outcomes. *Acad Emerg Med.* 2016; 23:1153-60.
17. A Wadhvani, L Guo, E Saude, E Hein, **A McRae**, E Lang, D Bhayana. Intravenous and oral contrast vs interavenous contrast alone computed tomography for the visualization of appendix and diagnosis of appendicitis in adult emergency department patients. *Can Assoc Rad J.* 2015; 67:234-41.
18. **McRae AD**, Taljaard M, Weijer C. Cluster-randomized trials: a closer look. *Clin Trials.* 2016; 13:294-300.
19. Seiberlich LE, Keay V, Kallos S et al. Clinical performance of a blood control peripheral intravenous catheter: a prospective randomized, controlled study. *Int Emerg Nurs.* 2016; 25:59-64.
20. Crowder KR, Jones TD, Lang ES et al. The impact of high-sensitivity troponin implementation on hospital operations and patient outcomes in three tertiary care centers. *Am J Emerg Med.* 2015;33:1790-4.
21. Brown GM, Lang E, Patel K, et al. A national faculty development needs assessment in emergency medicine. *Can J Emerg Med.* 2015; 18:161-82.
22. **McRae AD** and Andruchow JE. Highly-Sensitive Troponin T algorithm facilitates early discharge of low-risk chest pain patients within one hour of emergency department arrival. *Evid Based Med.* 2015; 20(4):144.
23. R Minhas, G Vogelaar, D Wang, Blanchard I *et al.* A Prehospital Treat and Release Protocol for Supraventricular Tachycardia. *CJEM.* 2015; 17(4); 395-402.
24. V Thiruganasambandamoorthy, M Taljaard, IG Stiell *et al.* Emergency department management of syncope: need for standardization and improved risk stratification. *Intern Emerg Med.* 2015; 10(5):619-27.
25. D Harris, C Hall, K Lobay, **A McRae et al.** Canadian Association of Emergency Physicians Position Statement on Acute Ischemic Stroke. *Can J Emerg Med.* 2014; 17(2):217-26.

26. SJ Netherton, K Lonergan, D Wang, **A McRae** and E Lang. Computerized order entry and decision support improves ED analgesic ordering for renal colic. *Am J Emerg Med.* 2014; 32(9):958-61.
27. P Kavsak, AS Jaffe, PE Hickman, NL Mills, KH Humphries, **A McRae et al.** Canadian Institutes of Health Research Dissemnation Grant on High-Sensitivity Cardiac Troponin. *Clin Biochem.* 2014; 47(16-17): 155-7.
28. V Thiruganasambandamoorthy, IG Stiell, ML Sivilotti, H Murray, BH Rowe, E Lang, **A McRae**, R Sheldon and GA Wells. Risk stratification of adult emergency department syncope patients to predict short-term serious outcome after discharge (RiSEDS) study. *BMC Emerg Med.* 2014; 14(1):8. Epub.
29. D Peterson, S MacLeod, K Woolfrey and **A McRae.** Predictors of Failure of Empiric Outpatient Antibiotic Therapy in Emergency Department Patients with Uncomplicated Cellulitis. *Acad Emerg Med.* 2014; 21(5): 526-31.
30. J Taylor, K McLaughlin, **A McRae**, E Lang and A Anton. Use of prehospital ultrasound in North America: A survey of emergency medical services medical directors. *BMC Emerg Med.* 2014; 14(1):6. Epub.
31. M Taljaard, JC Brehaut, C Weijer, R Boruch, A Donner, MP Eccles, **A McRae**, R Saginur, M Zwarenstein and JM Grimshaw. Variability in research ethics review of cluster randomized trials: a scenario-based survey in three countries. *Trials.* 2014; 15:48 Epub.
32. M Taljaard, SH Chaudhry, JC Brehaut, R Boruch, A Donner, MP Eccles, **A McRae**, R Saginur, M Zwarenstein and JM Grimshaw. Survey of consent practices in cluster randomized trials: improvements are needed in ethical conduct and reporting. *Clinical Trials.* 2014; 11(1):60-9.
33. **A McRae**, C Bennet, JB Brown, M Taljaard, C Weijer, J Grimshaw, J Brehaut, S Chaudhry and A Donner. Researchers' perceptions of ethical challenges in cluster randomized trials: a qualitative analysis. *Trials.* 2013; 14(1):1.
34. SH Chaudhry, JC Brehaut, JM Grimshaw, C Weijer, R Boruch, A Donner, MP Eccles, **A McRae**, R Saginur, ZC Skea, M Zwarenstein and M Taljaard. Challenges in the research ethics review of cluster randomized trials: international survey of investigators. *Clin Trials.* 2013; 10(2):257-68.
35. **A McRae**, Z Skea, C Bennett, A Donner, M Eccles, J Grimshaw, M Taljaard and C Weijer. Reporting of patient consent in healthcare cluster randomized trials is associated with the type of study interventions and publication characteristics. *J Med Ethics.* 2013; 39(2): 119-24. Funding: CIHR Operating Grant.
36. **A McRae**, C Bennett, J Belle Brown, C Weijer, R Boruch, J Brehaut, S Chaudhry, A Donner, M Eccles, J Grimshaw, M Zwarenstein, M Taljaard. Researchers' perceptions of

- ethical challenges in cluster randomized trials: a qualitative analysis. *Trials*. 2013; 14(1):1-7.
37. C Weijer, JM Grimshaw, MP Eccles, **A McRae**, A White, JC Brehaut, M Taljaard, and the Ottawa Ethics of Cluster Randomized Trials Consensus Group. The Ottawa Statement on the Ethical Conduct of Cluster Randomized Trials. *PLoS Medicine*. 2012; 9(11): e1001346. Funding: CIHR Operating Grant.
  38. A Gallo, C Weijer, A White, JM Grimshaw, R Boruch, JC Brehaut, A Donner, MP Eccles, **A McRae**, R Saginur, M Zwarenstein and M Taljaard. What is the role and authority of gatekeepers in cluster randomized trials in health research? *Trials*. 2012; 13(1):116. Epub July 26, 2012. Funding: CIHR Operating Grant
  39. A Yip, S McLeod, **A McRae** and B Xie. Influence of publicly available online wait time data on emergency department choice in patients with noncritical complaints. *Can J Emerg Med*. 2012; 14(4): 233-42.
  40. **A McRae**, C Weijer, A Binik, JM Grimshaw, R Boruch, JC Brehaut, A Donner, MP Eccles, R Saginur, A White and M Taljaard. When is informed consent required in cluster randomized trials in health research? *Trials*. 2011; 12:202 doi:10.1186/1745-6215-12-202. Funding: CIHR Operating Grant.
  41. N Ivers, M Taljaard, S Dixon, C Bennett, **A McRae**, J Taleban, Z Skea, J Brehaut, R Boruch, MP Eccles, JM Grimshaw, C Weijer, M Zwarenstein and A Donner. Did the extension of CONSORT to cluster randomised trials result in improved quality of reporting and study methodology? Review of a random sample of 300 trials from 2000 to 2008. *BMJ*. 2011; 343:d5886. Funding: CIHR Operating Grant.
  42. **A McRae**, C Weijer, A Binik, A White, JM Grimshaw, R Boruch, JC Brehaut, A Donner, MP Eccles, R Saginur, M Zwarenstein and M Taljaard. Who is the research subject in cluster randomized trials in health research? *Trials*. 2011; 12:183. Funding: CIHR Operating Grant.
  43. A Binik, **A McRae**, C Weijer, J Grimshaw, R Boruch, J Brehaut, A Donner, MP Eccles, R Saginur, M Taljaard and M Zwarenstein. Does clinical equipoise apply to cluster randomized trials? *Trials*. 2011; 12:118. Funding: CIHR Operating Grant.
  44. M Taljaard, **A McRae**, C Weijer, C Bennett, S Dixon, J Taleban, Z Skea, J Brehaut, M Eccles, A Donner, R Saginur, R Boruch and JM Grimshaw. Inadequate reporting of research ethics review and informed consent in cluster randomised trials: review of a random sample of published trials. *BMJ*. 2011; 342: d2496. Funding: CIHR Operating Grant
  45. C Weijer, J Grimshaw, M Taljaard, A Binik, R Boruch, J Brehaut, A Donner, M Eccles, A Gallo, **A McRae**, R Saginur and M Zwarenstein. Ethical Challenges Posed by Cluster Randomized Trials in Health Research. *Trials*. 2011; 12:100. Funding: CIHR Operating Grant.



46. M Taljaard, J McGowan, J Grimshaw, J Brehaut, **A McRae**, MP Eccles and A Donner. Electronic search strategies to identify reports of cluster randomized trials in MEDLINE: low precision will improve with adherence to reporting standards. *BMC Medical Research Methodology* 2010, 10:15. Funding: CIHR Operating Grant.
47. M Taljaard, C Weijer, JM Grimshaw, J Belle Brown, A Binik, R Boruch, J C Brehaut, S Chaudhry, M P Eccles, **A McRae**, R Saginur, M Zwarenstein and A Donner. Ethical and Policy Issues in Cluster Randomized Trials: Rationale and Design of a Mixed Methods Research Study. *Trials*. 2009; 10:61 Funding: CIHR Operating Grant.
48. **A McRae**, H Murray and M Edmonds. Diagnostic accuracy and clinical utility of emergency department targeted ultrasonography in the evaluation of first-trimester pelvic pain and bleeding: a systematic review. *Can J Emerg Med*. 2009; 11(4) 355-364.
49. **A McRae** and C Weijer. US Federal Research Regulations for Emergency Research: A Practical Guide and Commentary. *Acad Emerg Med*. 2008; 15(1): 88-97.
50. **A McRae**, S Ackroyd-Stolarz and C Weijer. Risk in Emergency Research Using a Waiver of Consent: Implications of a Structured Approach for IRB Review. *Acad Emerg Med*. 2005; 12: 1104-12.
51. M Pauls, **A McRae**, S Campbell and P Dungey. Ethics in the Trenches Part 2: Case Studies of Ethical Challenges in the Emergency Department. *Can J Emerg Med*. 2004; 6(5): 363-6.
52. **A McRae** and C Weijer. Lessons from Everyday Lives: A Moral Justification for Acute Care Research. *Crit Care Med*. 2002; 30(5): 1146-52.

#### *Book Chapters*

1. **A McRae** and C Weijer. Lessons from Everyday Lives: A Moral Justification for Acute Care Research. In Viens AM (ed.). *Emergency Research Ethics*. London, United Kingdom: Ashgate, 2013.
2. **A McRae**, S Ackroyd-Stolarz and C Weijer. Risk in Emergency Research Using a Waiver of Consent: Implications of a Structured Approach for IRB Review. In Viens AM (ed.). *Emergency Research Ethics*. London, United Kingdom: Ashgate, 2013.
3. **A McRae** and C Weijer. US Federal Research Regulations for Emergency Research: A Practical Guide and Commentary. In Viens AM (ed.). *Emergency Research Ethics*. London, United Kingdom: Ashgate, 2013.

#### *Contributions to a Collective Work*

1. **A McRae**. Educational Primer: *Research Ethics*. Prepared for the Royal College of Physicians and Surgeons of Canada Bioethics Education Project. 2006. Available at: [http://rcpsc.medical.org/bioethics/extended-primers/research-ethics\\_e.php](http://rcpsc.medical.org/bioethics/extended-primers/research-ethics_e.php)

2. **A McRae.** Case Module: Mandatory Reporting by Physicians—Public Safety. Prepared for the Royal College of Physicians and Surgeons of Canada Bioethics Education Project. 2006. Available at [http://rcpsc.medical.org/bioethics/cases/case\\_3\\_3\\_3\\_e.php](http://rcpsc.medical.org/bioethics/cases/case_3_3_3_e.php)
3. M Jackman and **A McRae.** Case Module: Medical Decision-making by adolescents and older children. Prepared for the Royal College of Physicians and Surgeons of Canada Bioethics Education Project. 2007. Available at [http://rcpsc.medical.org/bioethics/cases/case\\_1\\_5\\_2\\_e.php](http://rcpsc.medical.org/bioethics/cases/case_1_5_2_e.php)

## Supervision of Trainees

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- Amy Yu. MSc supervisory committee, Department of Community Health Sciences, University of Calgary. MSc Degree conferred June 2017.
- Allison Michaud. Supervision of Medical Student Research Project. A systematic review of clinical risk prediction tools for emergency department patients with acute heart failure. 2015-2017.
- Charles Wong. Supervision of CCFP-EM Resident Research Project. Variation in ED volumes secondary to a recurring mass gathering event. 2015.
- Kristin Burles. Supervision of Medical Student Research Project. Yield of an administrative data search strategy for patients with suspected pulmonary embolism *and* Accuracy of administrative data diagnostic coding for patients with suspected pulmonary embolism
- Kevin Senior. Supervision of summer research project. Diagnostic accuracy of age-adjusted D-Dimer in a retrospective cohort of patients with suspected pulmonary embolism.
- David Clinkard. Supervision of Medical Student Research Project. Nationwide Practice Variation and Adverse Events during Procedural Sedation for Electrical Cardioversion.
- Rajan Minhas BSc, EMT-P. Canadian Institutes of Health Research Summer Studentship. Supervision of medical student research project “Evaluation of an EMS treat-and-refer protocol for supraventricular tachycardia. 2012-Present.
- Danny Peterson, MD, PhD. Co-supervisor of resident research project: Predictors of Failure of Empiric Outpatient Antibiotic Therapy in Emergency Department Patients With Uncomplicated Cellulitis. 2009-2013.
- Amelia Yip, MD. Co-investigator of resident research project: Does publication of ED wait times on the world wide web influence patients’ choice of emergency departments for treatment of minor illnesses and injuries? 2009.
- Karalyn Church, MD. Co-investigator of resident research project: A Pilot Study examining the safety of ketamine and propofol in combination compared to propofol in emergency department procedural sedation. 2008.

## Scholarly Activities

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- Decision Editor, *Canadian Journal of Emergency Medicine*. 2012-present.
- Examiner and Lecturer, Emergency Medicine National Review Course. Kingston, ON. 2007-2011.

- Peer Reviewer, *Canadian Journal of Emergency Medicine, Trials, Journal of Medical Ethics, Journal of Clinical Epidemiology.*

### **Administrative Activities**

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- Vice Chair, CAEP Research Committee, 2016-present
- Member of executive. Network of Canadian Emergency Researchers. 2015-2018
- Member, CAEP Research Committee. 2014-present.
- Member, City-Wide Blood Transfusion Committee, London Health Sciences Center and St. Joseph's Health Center, London, ON. 2009-2010.
- Chair, Working Group on Industry Funding of Divisional Academic Activities. Division of Emergency Medicine, University of Western Ontario. 2009-2010.
- Member, Residency Training Program Committee, Dept. of Emergency Medicine, Queen's University, 2002-2007.
- Member, Hospital Bioethics Committee, Kingston General Hospital. 2004-2006.