

Curriculum Vitae

SHELAGH B. COUTTS

BSc. (Hons), MB.ChB.(Hons),

*MD, FRCP(Glasg), FRCPC(Neurology), MSc(Clinical
Trials(Distinction))*

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GENERAL

Date of Birth	18th December 1973
Place of Birth	Glasgow, United Kingdom
Nationality	British/Canadian

ACADEMIC RECORD

1991-1997	University of Edinburgh Medical School
1994:	BSc - 1st Class Honours, Pathology
1997:	MB. ChB. with Honours
2000:	Membership of the Royal College of Physicians (MRCP(UK))
2003:	LMCC part II
2005:	MD University of Edinburgh – thesis entitled <i>Modern imaging: its role in prediction of outcome after stroke and TIA.</i>
2006:	Fellow of the Royal College of Physicians and Surgeons of Canada – Neurology. (FRCPC(Neurology)).
2007:	Elected as Fellow of the Royal College of Physicians and Surgeons of Glasgow (FRCP(Glasg)).
2011	Diploma in Clinical Trials (with Distinction) from the London School of Hygiene and Tropical Medicine.
2013	MSc in Clinical trials from the London School of Hygiene and Tropical Medicine (awarded with distinction).

AWARDS AND DISTINCTIONS

1993	2nd MB Biochemistry- Grade A, Pharmacology- Distinction.
1993	3rd MB Microbiology- Distinction, Pathology- Distinction.
1993	Scottish Home and Health Department Award.
1994	1st Class honours degree, B.Sc. Pathology.

- 1994 Pathological Society of Great Britain and Northern Ireland .
Bursary.
- 1995 Keasbey Memorial Foundation Bursary for Academic service to
the University.
- 1995 June: 4th MB Pathology- Grade A.
- 1996 Keasbey Memorial Foundation Bursary for Academic service to
the University.
- 1996 5th MB Obstetrics and Gynaecology - Distinction.
- 1996 Cross Trust Award.
- 1997 Keasbey Memorial Foundation Bursary for Academic service to
the University.
- 1997 5th MB Surgery - Grade A.
- 1997 *Honours*: MB. ChB.
- 2002 Clinical Research Fellowship Award from the Heart and Stroke Foundation
of Canada
- 2002 Clinical Research Fellowship from the Alberta Heritage Foundation.
- 2002 Canadian Young Clinical Stroke Investigator Award – Heart and Stroke
Canada.
- 2004 Canadian Society for Clinical Investigation Award for Excellence in
resident research -Honorable mention.
- 2005 The Robert G. Siekert New Investigator award in Stroke from the
American Stroke Association stroke council.
- 2005 Abstract entitled “*Presence of DWI lesion on acute MRI in minor stroke
and TIA patients predicts recurrent stroke and clinical outcome*” rated as
number 1 at European Stroke meeting 2005.
- 2005 MD: University of Edinburgh – thesis entitled *Modern imaging: its role
in prediction of outcome after stroke and TIA.*”
- 2008 Petro-Canada Young Innovator Award in Community Health.
- 2009 Distinguished Clinician Scientist award. Joint award between HSFC,
CIHR Institute of Circulatory and Respiratory Health, and AstraZeneca
Canada Inc.
- 2009 McDonald Scholarship - awarded to the highest-rated applicant in the
New Investigator competition at the Heart and Stroke Foundation of
Canada.
- 2009 Clinical Investigator award from Alberta Heritage Foundation for
Medical Research.

- 2010 Michael J. Pessin Award from the American Academy of Neurology for stroke leadership.
- 2011 2011 CIHR-CMAJ: Top Achievements in Health Research Awards. Awarded to Dr. Michael Hill, **Dr. Shelagh Coutts**, Dr. Andrew Demchuk, and Dr. Eric Smith for the Calgary Stroke Program (Calgary, Alberta) that has changed the face of stroke care by thoroughly integrating research and clinical care.
- 2012 Named in Calgary's top 40 under 40 by Avenue Magazine, Calgary.

CLINICAL EXPERIENCE

April 2012 –

ASSOCIATE PROFESSOR NEUROLOGY

Calgary Stroke Program, Department of Clinical Neurosciences and Radiology,
Hotchkiss Brain Institute, University of Calgary
Foothills Hospital, 1403 29th Street NW, Calgary, AB, T2N 2T9, CANADA

September 2006 – April 2012

ASSISTANT PROFESSOR NEUROLOGY

Calgary Stroke Program, Department of Clinical Neurosciences and Radiology,
Hotchkiss Brain Institute, University of Calgary

March 2004 – June 2006

NEUROLOGY RESIDENCY TRAINING

Dr William Fletcher

Department of Clinical Neurosciences, University of Calgary, Foothills Hospital, Calgary, Canada.

General Neurology training leading to the FRCPC.

August 2001 – March 2004

FELLOWSHIP IN STROKE NEUROLOGY

Professor Alastair Buchan, Dr Andrew Demchuk and Dr Michael Hill

Department of Clinical Neurosciences, University of Calgary, Foothills Hospital, Calgary, Canada

The brain attack team provides hyper-acute treatment of stroke including thrombolysis to the whole of Southern Alberta (approximately 2 million people). Skills developed include Transcranial Doppler use in acute stroke (and in monitoring for embolisation), thrombolysis of stroke, interpretation of the acute changes on CT in early ischemic stroke (ASPECTS) and the use of acute MRI scanning in acute stroke. My research has involved looking at the role of non invasive imaging modalities in acute stroke and TIA as they relate to clinical outcome. This work was the basis for the thesis that was submitted for the degree *Doctor of Medicine (MD)*

to the University of Edinburgh, UK. This was a postgraduate research thesis which was entitled “*Modern imaging: its role in prediction of outcome after stroke and TIA.*”

SENIOR HOUSE OFFICER/ JUNIOR HOUSE OFFICER POSTS:

August 1999 – July 2001 SHO Internal Medicine Rotation, Glasgow Royal Infirmary, UK.

This was a busy internal medical rotation with 2 years of medical receiving and acute medical specialities:

Rheumatology, Neurology, General Medicine and Diabetes, Respiratory Medicine and Cardiology. This led to the attainment of membership of the royal college of physicians (MRCP(UK)).

February 1999-August 1999 SHO in Pathology, Department of Pathology, Glasgow Royal Infirmary, UK.

August 1998-February 1999 SHO in Accident and Emergency, Glasgow Royal Infirmary, UK.

February 1998-August 1998 House Officer in Paediatric Surgery, Royal Hospital for Sick Children, Edinburgh, UK.

August 1997-February 1998 House Officer in Medicine, Respiratory Medicine Unit, The Royal Infirmary of Edinburgh, Edinburgh, UK.

RESEARCH EXPERIENCE

2015 - **TNK-tPA Evaluation for Minor stroke with Proven occlusion (TEMPO-2) study.**

Principal investigator: Shelagh Coutts

2013 - **Reducing Stroke Burden with Hospital-Ready Biomarker Test for Rapid TIA Triage: The SpectRA Project.**

Co- project lead: Shelagh Coutts

This is a large project funded by Genome Canada that the aim of identifying a blood test (protein) for the diagnosis of TIA and minor stroke. This project is run jointly between Calgary and Victoria.

2012-2013 **International Cryptogenic Embolic Stroke (ICES) Working Group. Operations committee.**

Two international randomized controlled trials have come out of this work that resulted in Lancet Neurology opinion paper.

2012- **TNK-tPA Evaluation for Minor stroke with Proven occlusion (TEMPO-1) study.**

Co-principal investigator: Dr Shelagh B. Coutts

Phase II trial designed to evaluate the safety of using low dose TNK-tPA to treat minor

ischemic stroke with proven arterial occlusion.

2010- **Diagnosis Of Uncertain-origin Benign Transient neurological symptoms. (DOUBT)**

Principal investigator: Dr Shelagh B. Coutts.

Multicentre prospective imaging studying the clinical features of non-motor and speech transient neurological events to MRI evidence of acute ischemia. The aim is to identify a high risk population clinically within this low risk group. This is funded by a 5 year CIHR grant.

2009-2014 **Alberta Stroke Prevention in TIAs and mild strokes (ASPIRE).**

Principal investigator: Dr Shelagh B. Coutts.

This is a prospective population based cohort study of TIA patients within the province of Alberta. We have implemented a new triage system to identify patients at high risk for a stroke. In this study we will prospectively assess recurrent stroke rates within this population to assess the success of our triage strategy.

2008- 2011 **CT And MRI in the Triage of TIA and minor Cerebrovascular events to identify High risk patients- CATCH.**

Principal investigator: Dr Shelagh B. Coutts.

This is a prospective cohort study of the use of CT/CTA to identify patients at high risk of recurrent events after TIA or minor stroke. It will also assess what additional benefit an MRI has over CT/CTA in predicting outcome in these patients. Patients will be enrolled if assessed and had a CT/CTA completed within 24 hours of symptom onset.

2001-2004 **Vascular Imaging of acute Stroke for Identifying predictors of clinical Outcome and recurrent ischemic events -VISION**

Supervisors: Dr Andrew Demchuk, Stroke Research Office, Department of Clinical Neurosciences, Foothills Hospital, Room 1162, 1403-29 St NW, Calgary, Alberta, CANADA

This was a prospective cohort study, which evaluated 350 stroke and TIA patients who presented within 12 hours of symptom onset. This study not only targets tPA eligible patients but also tPA ineligible patients -with mild or resolving deficits; delayed presentation to ER; and TIA patients. The study will compare imaging techniques alone or in combination to see which technique(s) best predicts patient outcome.

1994 **Modulation of p53-Mediated Growth Arrest Versus Apoptosis**

Supervisor: Dr. M.B. Kastan, Paediatric Oncology, Johns Hopkins Oncology Centre, Baltimore, USA.

Sponsored by a bursary from the Pathological Society of GB and NI.

The presence of p53 can force a cell to follow one of 2 paths - apoptosis or growth arrest. The aim of this project was to investigate some of the factors controlling which path a cell can follow. To do this a cell line was cultivated which can be die by apoptosis in the absence

of growth factor and will undergo cell cycle arrest in the presence of growth factor. Using techniques of Western Blotting, Northern Blotting and gene transfection techniques the factors controlling the “switch” within these cells were examined.

1993-1994 **p53, Cell Cycling and Apoptosis in Peripheral T Lymphocytes**
Supervisors: Dr A.C. Clarke, Dr D.J.Harrison, Professor A. Wyllie
University of Edinburgh, Honours B.Sc. project.

Lymphocytes from mice genetically manipulated to be deficient in the *p53* gene (either heterozygote or homozygote) were examined *in vitro* and *in vivo* to monitor their response to various insults - radiation, CD4 ligation and growth factors. This research involved techniques of Southern Blotting, Cell Biology and computing skills using the HOME microscope (a microscope which is directly linked to a PC). The results showed that *in vivo* γ -irradiation of lymphocytes was *p53* dependent, CD4 ligation induced apoptosis was independent of *p53* and that the growth characteristics of lymphocytes are altered *in vitro* with the absence of a *p53* gene.

RESEARCH INTERESTS

- To improve the outcome after TIA and minor stroke using a multifaceted approach including, better triage, clinical assessment, diagnostic tests, imaging and clinical trials.

PUBLICATIONS

PEER REVIEWED MANUSCRIPTS

1. Canman CE, Gilmer TM, **COUTTS SB**, Kastan MB (1995)
Growth factor modulation of p53-mediated growth arrest versus apoptosis.
Genes and Development 9: 600-611.
2. Malcomson RDG, Clarke AR, Peter A, **COUTTS SB**, Howie SEM, Harrison DJ (1997).
Apoptosis induced by γ -irradiation, but not CD4 ligation, of peripheral T lymphocytes *in vivo* is p53-dependent.
Journal of Pathology 181: 166-171
3. **COUTTS SB**, Simon JE, Tomanek A, Barber PA, Chan J, Hudon ME, Eliasziw M, Mitchell JR, Frayne RF, Buchan AM, Demchuk AM (2003).
Reliability of assessing percentage of diffusion-perfusion mismatch.
Stroke 34:1681-1685.
4. **COUTTS SB**, Hill MD, Hu W, Sutherland GH for the Calgary Stroke Program (2003).
Hyperperfusion syndrome: Toward a more strict definition.
Neurosurgery 53:1053-1058.
5. **COUTTS SB**, Simon JE, Hudon M, Demchuk AM (2003)
What is causing crescendo TIA's?
Canadian Journal of Neurological Sciences;30:171-173.

6. **COUTTS SB**, Hu W, Hill MD (2003). Syncope and Cerebral Hypoperfusion. *Neuroimage. Neurology- 60: 2011.*
7. **COUTTS SB**, Barber PA, Demchuk AM, Hill MD, Pexman JHW, Hudon ME, Buchan AM. (2004) Mild neurological symptoms despite middle cerebral artery occlusion. *Stroke 35: 469-471.*
8. **COUTTS SB**, Demchuk AM, Barber PA, Hu WY, Simon JE, Buchan AM, Hill MD for the VISION study group (2004). Inter-observer variation of ASPECTS performed in real time. *Stroke 35:e103.*
9. **COUTTS SB**, Lev MH, Eliasziw M, Roccatagliata L, Hill MD, Schwamm LH, Pexman WJH, Koroshetz WJ, Hudon MH, Buchan AM, Gonzalez RG, Demchuk AM (2004). ASPECTS on CTA Source Images versus Unenhanced CT Scanning: Added Value in the Identification of Early Ischemic Changes and clinical outcome. *Stroke 35: 2472-2476.*
10. Bristow MS, Simon JE, Brown RA, Eliasziw M, Hill MD, **COUTTS SB**, Frayne R, Demchuk AM, Mitchell JR. (2005) Perfusion and Diffusion in Acute Ischemic Stroke: Human Gray and White Matter Have Different Thresholds for Infarction. *J Cereb Blood Flow Metab. 25:1280-1287.*
11. **COUTTS SB**, Simon JE, Sohn CH, Eliasziw M, Hill MD, Barber PA, Palumbo V, Kennedy J, Roy J, Gagnon A, Scott J, Buchan AM, Demchuk AM (2005). Triaging TIA and minor stroke patients using acute MRI. *Ann Neurol. 57:848-854.*
12. Kent DM, Hill, MD, Ruthazer R, **COUTTS SB**, Demchuk AM, Dzialowski I, Wunderlich O, von Kummer R.(2005) "Clinical-CT mismatch" and the response to systemic thrombolytic therapy in acute ischemic stroke. *Stroke 36:1695-1699.*
13. **COUTTS SB**, Hill MD, Simon JE, Sohn CH, Scott JN, Demchuk AM.(2005) Silent Ischemia in Minor Stroke and TIA patients identified on MR imaging. *Neurology 65: 513-517.*
14. Krol AL, **COUTTS SB**, Simon JE, Hill MD, Sohn CH, Demchuk AM. (2005) A Perfusion MRI Abnormalities in Speech or Motor Transient Ischemic Attack Patients. *Stroke.;36:2487-2489.*
15. Tomanek AI, **COUTTS SB**, Hill MD, Hudon ME, Morrish W, Sevick R, Simon JE, Frayne R, Buchan AM, Demchuk AM. (2006) Accuracy and Reliability of MR Angiography Compared to Conventional Selective Angiography in Acute Stroke Patients. *Can J Neurol Sci; 33: 58-62.*
16. Boulanger JM, **COUTTS SB**, Eliasziw M, Gagnon AJ, Simon JE, Subramaniam S, Sohn CH, Scott J, Demchuk AM, For the VISION Study Group. (2006) Cerebral microbleeds predict new fatal and non fatal disabling stroke in patients with ischemic stroke or transient ischemic attack. *Stroke; 37: 911-914.*
17. Dzialowski I, Hill MD, **COUTTS SB**, Demchuk AM, Kent DM, Wunderlich O, Von Kummer R. (2006). Extent of Ischemic Edema on CT before Thrombolysis: Prognostic Value of the Alberta Stroke Program Early CT Score in ECASS II. *Stroke; 37: 973-978.*
18. Murphy BD, Fox AJ, Lee D, Sahlas D, Black S, Hogan M, **COUTTS SB**, Demchuk AM, Goyal M, Symons S, Gulka I, Beletsky V, Pelz D, Lee TY. (2006) Identification of penumbra and infarct

in acute ischemic stroke using CT Perfusion derived blood flow and blood volume measurements (*Stroke*; 37:1771-1777).

19. Sample size estimates for phase II MR imaging studies in acute ischaemic stroke: infarct expansion. (2006). MR STROKE GROUP. *Stroke*; 37:2521- 2525.

20. Sylaja PN, **COUTTS SB**, Subramaniam S, Hill MD, Eliasziw M, Demchuk AM for the VISION Study Group. (2007) Acute ischemic lesions of varying ages predict risk of ischemic events in stroke / TIA patients. *Neurology* ;68:415-419.

21. Redgrave JNE, **COUTTS SB**, Schulz U, Briley D, Rothwell PM. (2007) Systematic review of associations between the presence of acute ischaemic lesions on diffusion-weighted imaging and clinical predictors of early stroke risk after TIA. *Stroke* ;38(5):1482-1488.

22. Boulanger JM, **COUTTS SB**, Eliasziw M, Subramaniam S, Scott JN, Demchuk AM (2007). Diffusion-Weighted Imaging-Negative Patients With Transient Ischemic Attack Are at Risk of Recurrent Transient Events. *Stroke*;38:2367-2369.

23. Krol AL, Dzialowski I, Roy J, Puetz V, Subramaniam S, **COUTTS SB**, Demchuk AM. (2007) Incidence of Radiocontrast Nephropathy in Patients Undergoing Acute Stroke Computed Tomography Angiography. *Stroke*;38:2364-2366.

24. Muir KW, Baird-Gunning J, Walker L, Baird T, McCormick M, **COUTTS SB**. (2007). Can the Ischemic Penumbra Be Identified on Noncontrast CT of Acute Stroke? *Stroke*;38:2485-2490.

25. Toth C, Martin L, Morrish W, **COUTTS SB**, Parney I. Dramatic MRI Improvement with Refractory Neurosarcoidosis Treated with Infliximab (2007). *Acta Neurol Scand*. 2007;116:259-262.

26. **COUTTS SB**, Eliasziw M, Hill MD, Scott JN, Subramaniam S, Buchan, AM, Demchuk AM for the VISION study group (2008). An Improved Scoring System for Identifying Patients at High Early Risk of Stroke and Functional Impairment After an Acute Transient Ischemic Attack or Minor Stroke. *International Journal of Stroke*; 3: 3-10.

27. Murphy BD, Fox AJ, Lee D, Sahlas D, Black S, Hogan M, **COUTTS SB**, Demchuk AM, Goyal M, Symons S, Gulka I, Beletsky V, Pelz D, Lee TY (2008). White Matter Thresholds for Ischemic Penumbra and Infarct Core in Patients with Acute Stroke: CT Perfusion Study.: A CT Perfusion study. *Radiology*; 247:818-825.

28. Sylaja PN, **COUTTS SB**, Krol A, Hill MD, Demchuk AM for the VISION Study Group (2008). When to expect negative diffusion-weighted images in stroke and transient ischemic attack. *Stroke*; 39:1898-1900.

29. Rosenthal ES, Schwamm LH, Roccatagliata L, **COUTTS SB**, Demchuk AM, Schaefer PW, Gonzalez RG, Hill MD, Halpern EF, Lev MH (2008). Role of Recanalization in Acute Stroke Outcome: Rationale for a CT Angiogram-Based "Benefit of Recanalization" Model. *AJNR. Am J Neuroradiol* ;29:1471-1475.

30. Puetz V, Sylaja PN, **COUTTS SB**, Hill MD, Dzialowski I, Mueller P, Becker U, Urban G, O'Reilly C, Barber PA, Sharma P, Goyal M, Gahn G, von Kummer R, Demchuk AM (2008).

Extent of hypoattenuation on CT angiography source images predicts functional outcome in patients with basilar artery occlusion. *Stroke*;39:2485-2490.

31. COUTTS SB, Hill MD, Herrera C, Choi YB, Koisor J, Subramaniam S, Demchuk AM for the VISION Study group (2008). Recurrent events in TIA and minor stroke: What events are happening and to which patients? *Stroke*. 39:2461-2466.

32. Bristow MS, Poulin BW, Simon JE, Hill MD, Kosior JC, **COUTTS SB**, Frayne R, Mitchel JR, Demchuk AM (2008). Modeling Infarct Growth in Acute Ischemic Stroke with MR Imaging. *J Magn Reson Imaging*. 28:837-846.

33. Puetz V, Dzialoski I, Hill MD, Subramaniam S, Sylaja PN, Krol A, Hudon M, , Hu WY, **COUTTS SB**, Barber PA, Watson T, Roy J, Demchuk AM for the Calgary CTA study group (2008). Intracranial thrombus extent predicts the clinical outcome, final infarct size and hemorrhagic transformation in ischemic stroke: the clot burden score. *International Journal of Stroke*. 3:230-236.

34. Puetz V, Dzialoski I, Subramaniam S, **COUTTS SB**, Krol A, O'Reilly C, Goyal M, Demchuk AM for the Calgary CTA study group (2009). Frequency and clinical course of stroke patients with intracranial nonocclusive thrombus on CT angiography. *Stroke*. 40:193-199.

35. Zhu H, Newcommon NN, Cooper ME, Green TL, Seal B, Klein G, Weir NU, **COUTTS SB**, Watson T, Barber PA, Demchuk AM, Hill MD, for the Calgary Stroke Program (2009). Impact of a Stroke Unit on Length of Hospital Stay. *Stroke*. 40:18-23.

36. Poppe AY, **COUTTS SB**, Kosior JC, Hill MD, O'Reilly CM, Demchuk AM. For the VISION 1 and 2 Study Groups (2009). Normal magnetic resonance perfusion-weighted imaging in lacunar infarcts predicts a low risk of early deterioration. *Cerebrovasc Dis*. 19;28:151-156.

37. Steffenhagen N, Hill MD, Poppe AY, Buchan AM, **COUTTS SB**. (2009) Should you thrombolysate all stroke patients with baseline NIHSS score ≤ 5 ? *Cerebrovasc Dis*. 28:201-202.

38. COUTTS SB and Goyal M (2009). When recanalisation does not improve clinical outcomes. *Stroke*. 40:2661. Editorial.

39. Saposnik G, Kapral MK, Demchuk A, **COUTTS S**, Hill MD, for the Investigators of the Registry of the Canadian Stroke Network (RCSN); Stroke Outcome Research Canada (SORCan) Working Group (2009). Do All Age Groups Benefit From Organized Stroke Care? *Stroke*. 40:3321-3327.

40. Puetz V, Sylaja PN, Hill MD, **COUTTS SB**, Dzialowski I, Becker U, von Kummer R, Demchuk AM (2009). CT Angiography source images predict final infarct extension in patients with basilar artery occlusion. *AJNR*. 30:1877-1883.

41. COUTTS SB, O'Reilly C, Hill MD, Steffenhagen N, Poppe AY, Boyko MJ, Puetz V, Demchuk AM for the Calgary CTA study group (2009). CT and CT Angiography Findings Predict Functional Impairment in Patients with Minor Stroke and TIA. *International Journal of Stroke*. 4:448-453.

42. Simon J, LeBrie M, **COUTTS SB** (2009). Stroke care – more than just saving brain. *Canadian Journal Neurological Sciences*. 36:671-672. Editorial.

- 43.** Choi Y, Saqqur M, Asil T, Jin A, Stewart E, Stephenson C, Ibrahim M, Roy J, Boulanger JM, **COUTTS S**, Khan F, Demchuk AM (2010). A Combined Power M-mode and Single Gate Transcranial Doppler Ultrasound Microemboli Signal Criteria for Improving Emboli Detection and Reliability. *J Neuroimaging* 20:359-367.
- 44.** Steffenhagen N, Campos CR, Poppe AY, Khan F, Kosior J, Demchuk AM, Hill MD, **COUTTS SB** (2010). Reliability of Measuring Lesion Volumes in TIA and Minor Stroke Patients. *Stroke*. 41:814-816.
- 45.** DeVetten G, **COUTTS SB**, Hill MD, Goyal M, Eesa M, O'Brien B, Demchuk AM, Kirton A for the MONITOR and VISION study groups (2010). Acute corticospinal tract Wallerian degeneration is associated with stroke outcome. *Stroke*. 41:751-756.
- 46.** Choi Y, Saqqur M, Stewart E, Stephenson C, Roy J, Boulanger JM, **COUTTS S**, Demchuk AM (2010). Relative Energy Index of Microembolic Signal Can Predict Malignant Microemboli. *Stroke*. 41:700-706.
- 47.** Puetz V, Dzialowski I, Hill MD, Steffenhagen N, **COUTTS SB**, O'Reilly C, Demchuk AM for the Calgary CTA Study group (2010). Malignant Profile detected by CT angiographic information predicts poor prognosis despite thrombolysis within 3 hours from symptom onset. *Cerebrovascular diseases*. 29:584-591.
- 48.** Giles MF, Albers GW, Amarenco P, Arsava EM, Asimos AW, Ay H, Calvet D, **COUTTS S**, Cucchiara BL, Demchuk AM, Johnston SC, Kelly PJ, Kim AS, Labreuche J, Lavalley PC, Mas J-L, Merwick A, Purroy F, Rosamond WD, Sciolla R, Rothwell PM (2010). Addition of brain infarction to the ABCD² score (ABCD²I): a collaborative analysis of unpublished data on 4574 patients. *Stroke*.41:1907-1913.
- 49.** Merwick A, Albers GW, Amarenco P, Arsava EM, Ay H, Calvet D, **COUTTS SB**, Cucchiara BL, Demchuk AM, Furie KL, Giles M, Labreuche J, Lavalley P, Mas JL, Olivot JM, Purroy F, Rothwell PM, Saver JL, Sheehan OC, Stack JP, Walsh C, Kelly PJ (2010). Addition of brain and carotid imaging to the ABCD² score to identify patients at high early risk of stroke after transient ischaemic attack: a multicentre observational study. *Lancet Neurology*. 9:1060-1069.
- 50.** Chan W, **COUTTS SB**, Hanly P. Sleep Apnea in Patients with Transient Ischemic Attack and Minor Stroke- Opportunity for Risk Reduction of Recurrent Stroke? (2010). *Stroke*. 41:2973-2975.
- 51.** **COUTTS SB**, Matysiak-Scholze U, Kohlhase J, Innes AM (2011). Intracerebral Hemorrhage in a young man. *CMAJ*. ;183:E61-64.
- 52.** **COUTTS SB**, Sylaja PN, Choi YB, Alkathami A, SivaKumar S, Jeerakathill T, Sarna PS, Hill MD for the Calgary Stroke program (2011). The ASPIRE approach for TIA risk stratification. *Can J Neurol Sci*. 38:78-81.
- 53.** Goyal M, Menon BK, **COUTTS SB**, Hill MD, Demchuk AM, for the Penumbra Pivotal Stroke Trial Investigators (2011). Effect of baseline CT scan appearance and time to recanalization on clinical outcomes in endovascular thrombectomy of acute ischemic strokes. *Stroke*. 42:93-97.

- 54. COUTTS SB**, Hill MD, Eliasziw M, Demchuk AM for the VISION study group. Final 2 year results of the Vascular Imaging of acute Stroke for Identifying predictors of clinical Outcome and recurrent ischemic events (VISION) study (2011). *BMC Cardiovascular diseases*. Apr 23;11(1):18.
- 55.** Bhatia R, Bal SS, Shobha N, Menon BK, Tymchuk S, Puetz V, Dzialowski I, Coutts SB, Goyal M, Barber PA, Watson T, Smith EE, Demchuk AM; for the Calgary CTA Group. CT Angiographic Source Images Predict Outcome and Final Infarct Volume Better Than Noncontrast CT in Proximal Vascular Occlusions. *Stroke*. 2011;42:1575-1580.
- 56.** Giles MF, Albers GW, Amarenco P, Arsava EM, Asimos AW, Ay H, Calvet D, **COUTTS SB**, Cucchiara BL, Demchuk AM, Johnston SC, Kelly PJ, Kim AS, Labreuche J, Lavalley PC, Mas JL, Merwick A, Purroy F, Rosamond WD, Sciolla R, Rothwell PM. Early risk of stroke and performance of the ABCD2 score in "tissue-defined" versus "time-defined" TIA: an international multi-centre collaborative study (2011). *Neurology*. 2011;77(13):1222-1228.
- 57.** Hill MD, **COUTTS SB**. Preventing stroke after transient ischemic attack. (2011). *CMAJ*:183(10):1127-8. Editorial.
- 58.** Hinnell C, Nadeau J, Lam, V, Hill MD, **COUTTS SB**. Sex Differences in Cerebral Venous Sinus Thrombosis: A 10-Year Experience (2012). *Can J Neurol Sci*. 39:74-77.
- 59.** Moreau F, Jeerakathil TJ, **COUTTS SB** for the ASPIRE investigators. Patients Referred for TIA May Still Have Persisting Neurological Deficits (2012) *Can J Neurol Sci*. 39:170-173.
- 60. COUTTS SB**, Modi J, Patel SK, Demchuk AM, Goyal M, Hill MD, for the CATCH study group. Early CT/CTA predicts recurrent events in minor stroke/TIA patients: Main results of the CT And MRI in the Triage of TIA and minor Cerebrovascular events to identify High risk patients (CATCH) study. (2012) *Stroke* ;43(4):1013-7. Epub 2012 Feb 2.
- 61.** Dowlathshahi D, Butcher KS, Asdaghi N, Nahirniak S, Bernbaum M, Giulivi A, Wasserman J, Poon M, **COUTTS SB**, on behalf of the CanPro Investigators. Poor prognosis in warfarin-associated intracranial hemorrhage despite prothrombin complex concentrate therapy: the CanPro registry. *Stroke*. 2012;43:1812-1817.
- 62.** Moreau F, Patel S, Lauzon ML, McCreary CR, Goyal M, Frayne R, Demchuk AM, **COUTTS SB**, Smith ES. Cavitation following acute symptomatic stroke depends on time, location and MRI sequence. *Stroke*. 2012;43:1837-1842.
- 63.** Jeerakathil T, Shuaib A, Majumdar SR, Demchuk, AM, Butcher KS, Watson T, Dean N, Gordon D, Edmond C, **COUTTS, SB** (2012). The Alberta Stroke Prevention in TIAs and mild strokes (ASPIRE) Intervention: Rationale and Design for Evaluating the Implementation of a Province-wide TIA Triaging System. *International Journal of Stroke*. *Int J Stroke*. 2012 Oct 23 epub.
- 64.** Bhatia, R, Shobha N, Menon BK, Bal SP, Kochar P, Palumbo V, Wong JH, Morrish WF, Hudon ME, Hu W, COUTTS SB, Barber PA, Watson T, Goyal M, Demchuk AM Hill MD. Combined Full Dose IV and Endovascular Thrombolysis in Acute Ischemic Stroke. *International Journal of Stroke*. *Int J Stroke*. 2012 Sep 27

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57th American Academy of Neurology Annual Meeting, Miami, FL (4/2005)

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36. Subramanian S, **COUTTS SB**, Sivakumar C, Boulanger J-M, Roy J, Palumbo V, Eliasziw M, Simon J, Buchan AM, Hill MD, Demchuk AM. New nomenclature to capture all clinical and MRI endpoints for early stroke prevention trials.

37. Subramanian S, **COUTTS SB**, Sivakumar C, Boulanger J-M, Roy J, Palumbo V, Eliasziw M, Simon J, Buchan AM, Hill MD, Demchuk AM. Sample size estimation using MRI endpoints as a surrogate marker of outcome in stroke prevention trials. New nomenclature to capture all clinical and MRI endpoints for early stroke prevention trials.

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Events Predicts Future Transient Ischemic Attacks but not New Strokes. *Stroke* 37:644. Platform.

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15th European Stroke Conference, May 2006 Brussels, Belgium

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16th European Stroke Conference, May 2007 Glasgow, Scotland

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signal criteria improve emboli detection and limit artifact misinterpretation. *Cerebrovascular diseases*; 23(Suppl 2): 8. Platform

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17th European Stroke Conference, May 2008 Nice, France.

64. **COUTTS SB**, Hill MD, Herrera C, Choi YB, Koisior J, Subramaniam S, Demchuk AM for the VISION Study group. Recurrent events in TIA and minor stroke: What events are happening and to which patients? *Cerebrovascular diseases* 2008;25(Suppl 2):25 Platform.

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34rd International Conference on Stroke and Cerebral Circulation, San Diego, CA, USA (2/2009).

73. Poppe AY, Eesa M, Sharma P, Steffenhagen N, Demchuk AM, **COUTTS SB**, for the VISION 1 and 2 Study Groups. Comparison of multimodal MRI versus CT/CTA in predicting outcome after TIA and minor stroke. *Stroke* 2009;40:97. poster.

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81. Nadeau JO, Lam V, Hinnell C, Hill MD, **COUTTS SB**. Clinical features, risk factors and outcome in 84 patients with cerebral venous sinus thrombosis. In press. Poster.

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88. COUTTS, SB, Jeerakathil T, Sylaja PN, Hill MD. The ASPIRE approach for TIA risk stratification. *Stroke* 2010; 41(7): e477. Poster

89. Chan W, **COUTTS SB**, Hanly P. Sleep Apnea in Patients with Transient Ischemic Attack (TIA) and Minor Stroke. *Stroke* 2010; 41(7): e476. Poster

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36rd International Conference on Stroke and Cerebral Circulation, Los Angeles, CA, USA (2/2011).

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102. **COUTTS SB**, Modi J, Patel SK, Demchuk AM, Goyal M, Hill MD. CT and CTA abnormalities predict recurrent stroke after TIA and minor stroke. *Stroke 2011;42:e588. Platform*

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106. Asdaghi N, Butcher KB, Qazi A, Coulter JI, Tymchuk S, Hill MD, Demchuk AM, **COUTTS SB**. Perfusion imaging predicts outcome in TIA and minor stroke. *Stroke* 2011;42:e592. *Poster*

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37th International Conference on Stroke and Cerebral Circulation, New Orleans, LO, USA (2/2012).

109. Liebeskind DS, Alger JR, Scalzo F, Hao Q, Fong AK, Saver JL, Dani KA, Muir KW, Demchuk AM, **COUTTS SB**, Luby M, Warach S on behalf of the STIR and VISTA Imaging Investigators. Multiparametric T2*- Permeability MRI Accurately Predicts Hemorrhagic Transformation: STIR/VISTA Imaging Multicenter Observational Study. *Stroke* 2012;43:A97. Platform.

110. **COUTTS SB**, Modi J, Patel SK, Demchuk AM, Goyal M, Hill MD. Predicting recurrent stroke after TIA and minor stroke: Results of the prospective CT And MRI in the Triage of TIA and minor Cerebrovascular events to identify High risk patients (CATCH) study. *Stroke* 2012;43:A70. Platform.

111. Bal S, Patel SK, Almekhlafi M, Modi J, Demchuk AM, **COUTTS SB**. High rate of radiographic stroke recurrence in cryptogenic TIA and Minor stroke patients: a prospective imaging study. *Stroke* 2012;43:A3932. *Poster*.

112. Asdaghi N, Coulter JI, Modi J, Qazi A, Goyal M, Butcher KS, Hill MD, Demchuk AM, **COUTTS SB**. DWI Reversal is associated with Small Infarct Volume and Early Reperfusion in Patients with TIA and Minor Stroke. *Stroke* 2012;43:A2674. *Poster*.

113. Bal S, Coulter JI, Godzwon C, Weeks SG, Hutchison S, Hill MD, Menon BK, **COUTTS SB**. Low yield of Transthoracic and Transesophageal Echocardiography in the Management of Patients with Acute Ischemic Strokes. *Stroke* 2012;43:A3530. *Poster*.

114. **COUTTS SB**, Demchuk AM, Poppe AY, Shobha N, Barber PA, Hill MD. The Historical Stroke Severity Score Predicts Progression in TIA and Minor Stroke. *Stroke* 2012;43:A2185. *Poster*.

115. Asdaghi N, Coulter JI, Modi J, Qazi A, Goyal M, Butcher KS, Hill MD, Demchuk AM, **COUTTS SB**. Perfusion imaging predicts Outcome in TIA and minor stroke. A Prospective Derivation-Validation Study. *Stroke* 2012;43:A3595. *Poster*.

116. Asdaghi N, Coulter JI, Stewart TS, Goyal M, Butcher KS, Hill MD, Demchuk AM, **COUTTS SB**. What Perfusion Parameters Best Define Ischemic Penumbra in Patients with TIA and Minor Stroke; Data from the VISION study. *Stroke* 2012;43:A3007. *Poster*.

117. Vahidy S, McCourt R, Gould EB, Gupta D, Mushtaq U, Asdaghi N, **COUTTS SB**, Hill MD, Demchuk AM, Jeerakathil J, Emery D, Butcher KS. Blood Brain Barrier Permeability Increases in Intracerebral Hemorrhage do not Predict Perihematoma Edema Growth. *Stroke* 2012;43:A2618. Poster

118. Gould EB, McCourt R, Vahidy S, Asdaghi N, Hill MD, **COUTTS SB**, Demchuk AM, Jeerakathil T, Emery D, and Butcher KS. Autoregulation of Cerebral Blood Flow is Preserved in Primary Intracerebral Hemorrhage. *Stroke*;43:A2619. Poster

The international conference on heart and brain. March 2012, Paris, France.

119. Bal S, Patel SK, Almekhlafi M, Modi J, Demchuk AM, **COUTTS SB**. High rate of radiographic stroke recurrence in cryptogenic TIA and Minor stroke patients: a prospective imaging study.

50th American Society of Neuroradiology (ASNR). April 2012, New York, NY, USA.

120. Goyal M, Hill MD, Modi J, Patel SK, Demchuk AM, **COUTTS SB**. CT/CTA and MRI findings predict recurrent stroke after TIA and minor stroke: results of the prospective CATCH study. Platform.

121. Asdaghi N, Coulter JI, Modi J, Qazi A, Goyal M, Butcher KS, Demchuk AM, Hill MD, **COUTTS SB**. Perfusion imaging in TIA and Minor Stroke. A Prospective Derivation-Validation Study. Platform.

122. Asdaghi N, Coulter JI, Modi J, Qazi A, Goyal M, Butcher KS, Demchuk AM, Hill MD, **COUTTS SB**. The Rates and Characteristics of DWI Reversal in Patients with TIA and Minor Stroke. Platform.

2nd Alberta Graduate Conference, May 3-5, 2012, Edmonton, Alberta, Canada

123. Thomson QP, Modi J, **COUTTS SB**, Demchuk AM, Hill MD, Boyd SK, Goyal M, Mitchell JR. Finding Dying Brain in CT Images of Acute Ischemic Stroke.

European Stroke Conference, May 2012, Lisbon, Portugal.

124. Camden MC, Demchuk AM, Poppe AY, Shobha N, Barber PA, Hill MD, **COUTTS SB**. The Historical Stroke Severity Score Predicts Progression in TIA and Minor Stroke. *Cerebrovascular diseases* 2012; Poster. *Cerebrovascular Diseases*; 2012: 33(suppl 2) p520.

125. Asdaghi N, Coulter JI, Modi J, Qazi A, Goyal M, Demchuk AM, Hill MD, **COUTTS SB**. Perfusion imaging predicts Outcome in TIA and minor stroke. A Prospective Derivation-Validation Study. Platform. *Cerebrovascular Diseases*; 2012: 33(suppl 2) p39.

126. Asdaghi N, Coulter JI, Stewart TS, Qazi A, Goyal M, Hill MD, Demchuk AM, **COUTTS SB**. Statin Therapy (prior or post) does not Improve Clinical and Radiographic Outcomes in Patients with TIA and Minor Stroke. Platform. *Cerebrovascular Diseases*; 2012: 33(suppl 2) p39.

127. Torres JA, Hill MD, Modi J, Patel SK, Demhuck AM, Goyal M, **COUTTS SB**. New and old clinical scores are equally poor in predicting recurrent stroke after TIA and minor stroke. Poster. *Cerebrovascular Diseases*; 2012: 33(suppl 2) p519.

128. Menon BK, Coulter JI, Bal S, Godzwon C, Weeks S, Hutchison S, Hill MD, **COUTTS SB**. Do all patients admitted to hospitals with acute ischemic strokes need in-hospital echocardiography? Platform. *Cerebrovascular Diseases*; 2012: 33(suppl 2) p67.

129. Bal S, Coulter JI, Menon BK, Godzwon C, Weeks SG, Hutchison S, Goyal M, Hill MD, Demchuk AM, **COUTTS, SB**. Utility of CT angiography compared to TEE for assessment of Aortic Arch Atherosclerosis in patients with acute Ischemic Stroke. Platform. *Cerebrovascular Diseases*; 2012: 33(suppl 2) p73.

130. Asdaghi N, Coulter JI, Stewart TS, Qazi A, Goyal M, Demchuk AM, Hill MD, **COUTTS SB**. DWI Reversal is associated with Small Infarct Volume and Early Reperfusion in Patients with TIA and Minor Stroke. Platform. *Cerebrovascular Diseases*; 2012: 33(suppl 2) p32.

130. **COUTTS SB**, Modi J, Patel SK, Demchuk AM, Goyal M, Hill MD, for the CATCH study group. Disability after minor stroke/TIA is mostly caused by a recurrent event and not the presenting event. Platform. *Cerebrovascular Diseases*; 2012: 33(suppl 2) p39.

131. Merwick A, Albers GW, Ay H, **COUTTS SB**, Cucchiara BL, Mas JL, Purroy F, Rothwell PM, Saver JL, Sharma VK, Tsivgoulis G, Kelly PJ. Statin treatment at onset of transient ischaemic attack with carotid stenosis is associated with reduced early stroke risk. Platform. *Cerebrovascular Diseases*; 2012: 33(suppl 2) p39.

132. Butcher KS, Hill MD, Jeerakathil T, **COUTTS SB**, Dowlathshahi D, Asdaghi N, Sharma M, Emery D, Shuaib A, Demchuk AM. The Intracerebral Hemorrhage Acutely Decreasing Arterial Pressure Trial (ICH ADAPT): Final Results. Platform. *Cerebrovascular Diseases*; 2012: 33(suppl 2) p51.

CIHR-ICRH Young Investigators Forum, June 4-6, 2012, Montréal, Québec, Canada

133. Thomson QP, Modi J, **COUTTS SB**, Demchuk AM, Hill MD, Boyd SK, Goyal M, Mitchell JR. Finding Lesion in CT Images of Acute Ischemic Stroke with Texture Analysis. CIHR-ICRH Young Investigators Forum, June 4-6, 2012, Montréal, Québec, Canada.

Computer Assisted Radiology and Surgery: 26th International Congress and Exhibition, June 27-30, 2012, Pisa, Italy

134. Thomson QP, Modi J, **COUTTS SB**, Demchuk AM, Hill MD, Boyd SK, Goyal M, Mitchell JR. Classification of Ischemic Brain Tissue in Acute Ischemic Stroke in Early CT Images with Texture Analysis. *Computer Assisted Radiology and Surgery: 26th International Congress and Exhibition*, June 27-30, 2012, Pisa, Italy.

3rd Canadian Stroke Congress, October 2012, Calgary, Canada

135. Thomson QP, Modi J, **COUTTS SB**, Demchuk AM, Hill MD, Boyd SK, Goyal M, Mitchell JR, Computational Texture Analysis: Finding Ischemic Brain Tissue in Early CT Images of Acute Ischemic Stroke. *Stroke* 2012;43: e126. Platform.

136. Horton M, Modi J, Patel SK, Demchuk AM, Goyal M, Hill MD, **COUTTS SB** for the Calgary Stroke Program. Refinement of imaging predictors of symptom progression and recurrent Stroke following Transient Ischemic Attack and Minor Stroke. *Stroke* 2012;43:e159. Poster.

137. Bal SS, Coulter JI, Godzwon C, Weeks SG, Hutchison S, Goyal M, Menon BK, Hill MD, Demchuk AM, **COUTTS SB.** Utility of CT angiography compared to tee for assessment of aortic arch atherosclerosis in patients with acute ischemic stroke. *Stroke* 2012;43:e157. Poster.

138. Kelloway LJ, Lindsay PM, Davies-Schinkel C, **COUTTS SB.** Providing direction for triaging patients with transient ischemic attack/non-disabling stroke. *Stroke* 2012;43:e160. Poster.

139. Lindsay P, Kelloway L, Ryan C, Murray B, Bradley D, Boulas M, Davies-Schinkel C, **COUTTS S.** A wake-up call to the role of sleep apnea in stroke. *Stroke* 2012;43: e160. Poster.

8th World Stroke Congress, October 10-13, 2012, Brasilia, Brazil

140. Thomson QP, Modi J, **COUTTS SB,** Demchuk AM, Hill MD, Boyd SK, Goyal M, Mitchell JR. Computational Texture Analysis: Finding Ischemic Brain Tissue in Early CT Images of Acute Ischemic Stroke. Platform.

Radiological Society of North America: 98th Scientific Assembly and Annual Meeting, November 25-30, 2012, Chicago, Illinois, USA

141. Thomson QP, Modi J, **COUTTS SB,** Demchuk AM, Hill MD, Boyd SK, Goyal M, Mitchell JR. Acute Ischemic Stroke Texture Analysis: Finding Ischemic Brain Tissue in Early CT Images. *Radiological Society of North America: 98th Scientific Assembly and Annual Meeting, November 25-30, 2012, Chicago, Illinois, USA.*

38th International Conference on Stroke and Cerebral Circulation, Honolulu, HI, USA (2/2013).

142. Moreau F, Modi J, Almekhlafi M, Bal S, Hill MD, **COUTTS SB.** Early MRI in TIA and minor stroke: do it or lose it. Platform. *Stroke.* 2013;44:A8.

143. Desai J, Abuzinadah A, Imoukhuede O, Modi J, Bernbaum M, **COUTTS SB.** Improvement in etiological identification in TIA and minor stroke using the Causative Classification of Stroke. Platform. *Stroke* 2013;44:A34.

144. Butcher KS, Jeerakathil T, Hill MD, **COUTTS SB,** Dowlatsahi D, Asdaghi N, Sharma M, Emery D, Shuaib A, Demchuk AM. The Intracerebral Hemorrhage Acutely Decreasing Arterial Pressure Trial (ICH ADAPT): Final Results. Platform. *Stroke.* 2013;44:A113.

145. Menon BK, Smith EE, **COUTTS SB,** Welsh DG, Faber JE, Nambiar VK, Goyal M, Hill MD, Demchuk AM, Cho KH, Chang HW, Hong J, Sohn SI. Metabolic Syndrome, Raised Serum Uric Acid And Poor Leptomeningeal Collateral Status In Patients With Acute Ischemic Strokes. *Stroke.* 2013;44:ATP163. Poster.

146. Gould B, McCourt R, Hill DH, Asdaghi N, Dowlatsahi D, Jeerakathil T, **COUTTS SB,** Demchuk AM, Shuaib A, Emery D, and Butcher KS. Acute Blood Pressure Reduction in Intracerebral Hemorrhage Patients Does Not Increase Hypoperfused Tissue Volume: a CT Perfusion Threshold Study. Poster. *Stroke.* 2013;44:AWP295.

147. McCourt R, Gould B, Hill MD, Jeerakathil T, Asdaghi N, Dowlatsahi D, **COUTTS SB,** Demchuk AM, Shuaib A, Emery D, and Butcher KS. Cerebral Blood Flow and Blood Pressure

Reduction Do Not Affect Perihematomal Edema Growth in Acute Intracerebral Hemorrhage. Stroke. 2013;44:ATMP81.

European Stroke Meeting, May 2013, London, UK.

148. Mandzia J, Smith EE, Barber PA, Godzwon C, Donaldson E, Aram H, **COUTTS SB**. Detailed Ninety Day Cognitive Performance in Patients with minor stroke and transient ischemic attack (TIA). Poster. Cerebrovascular Diseases 2013;35 (suppl 3): 510.

149. Mandzia J, Smith EE, Horton M, Hanly P, Barber PA, Godzwon C, Donaldson E, Asdaghi N, Patel S, Aram H, **COUTTS SB**. Imaging and Baseline Predictors of cognitive performance in minor stroke and TIA patients at 90 days. Poster. Cerebrovascular Diseases 2013;35 (suppl 3): 507

150. Bernbaum ML, Menon B, Smith EE, Goyal M, Frayne R, **COUTTS SB**. Regional Low Cerebral Blood Flow Predicts White Matter Hyperintensity Development at 18 Months in Patients with TIA and Minor Stroke. Poster. Cerebrovascular Diseases 2013;35 (suppl 3): 238

151. Desai JA, **COUTTS SB**, Scott SH, Metzler M, Jin AY, Dukelow SP. Assessment of Minor stroke and TIA with the KINARM Robot – A pilot study. Cerebrovascular Diseases 2013;35 (suppl 3): 724

152. Adatia S, Modi J, Goyal M, Demchuk AM, **COUTTS SB**. Are diffusion negative stroke syndromes really ischemic? Poster. Cerebrovascular Diseases 2013;35 (suppl 3): 574.

153. Kate MP, Choi V, Mouridsen K, Hansen MB, Ostergaard L, Jespersen S, Hill MD, Demchuk AM, **COUTTS SB**, Butcher KA. Blood pressure reduction does not result in perihematoma misery perfusion: A CT perfusion study. Cerebrovascular Diseases 2013;35 (suppl 3): 591

4th Canadian Stroke Congress, Montreal, Quebec, Canada. October 2013.

154. Mandzia J, Smith EE, Horton M, Hanly P, Barber PA, Godzwon C, Donaldson E, Asdaghi N, Patel S, Aram H, **COUTTS SB**. Imaging and Baseline Predictors of cognitive performance in minor stroke and TIA patients at 90 days. Stroke 2013;44: e182.

155. Gladstone DJ, Spring M, Dorian P, Thorpe K, Panzov V, Hall J, Vaid H, O'Donnell M, Laupacis A, Cote R, Sharma M, Blakely J, Shuaib A, Hachinski V, **COUTTS SB**, Sahlas DJ, Yip S, Teal P, Spence J, Buck B, Verreault S, Casaubon L, Penn A, Selchen D, Jin A, Howse D, Mehdiratta M, Mamdani MM, for the EMBRACE Steering Committee and Investigators. Frequent Atrial Premature Beats Predict Occult Paroxysmal Atrial Fibrillation in Patients with Cryptogenic Stroke: Results From the Embrace Multicentre Trial. Stroke 2013;44: e185

156. Mandzia JL, **COUTTS SB**, Kenney C, Hill MD. Thrombolysis for Minor Ischemic Stroke with Proven Acute Symptomatic Occlusion Using TNK-tPA (TEMPO-1). Stroke 2013;44: e228

39th International Conference on Stroke and Cerebral Circulation, San Diego, CA, USA (2/2014).

157. Wilson, CA, Tai W, Desai J, Olivot JM, **COUTTS SB**, MD; Albers GW, Cucchiara BL. Diagnostic yield of echocardiography in patients presenting with transient ischemic attack. Poster. Stroke 2014; 45 (Suppl 1): AWP175.

158. Asdaghi N, Modi J, **COUTTS SB**. Baseline Infarct Volume Predicts Disability in TIA and Minor Stroke Patients. Poster. Stroke 2014; 45 (Suppl 1): ATP292.

23rd European Stroke Meeting, May 2014, Nice, France.

159. COUTTS SB, Lindley R, Hill MD, Cohen G, Wardlaw J, Sandercock P on behalf of the TEMPO and IST-3 Investigators. Effect of thrombolysis in a minor stroke population. Analysis of minor stroke patients treated in the IST-3 study. Cerebrovascular diseases 2014;37(suppl 1): p156 Platform.

160. COUTTS SB, Fang S, Demchuk AM, Butcher KS, Majumder SR, Watson TJ, Shuaib A, Dean N, Gordon D, Edmond C, Jeerakathil T for the ASPIRE investigators. The Alberta Stroke Prevention in TIAs and mild strokes (ASPIRE) Project: results from the prospective telephone follow up cohort. Cerebrovascular diseases 2014;37 (suppl 1): p157. Platform.

161. Wu G, Arima H, Wang J, Yang J, Delcourt C, **COUTTS SB**, Chen X, Lindley R, Anderson C. for the ENCHANTED investigators. Accuracy of body weight estimation for thrombolysis treatment in the ENCHANTED study. Cerebrovascular diseases 2014;37 (suppl 1): p78. Platform.

162. Dubuc V, Modi J, Goyal M, Hill MD, **COUTTS SB**. Intracranial Occlusion in Proximal and Distal Vessels are at High Risk of Symptom Progression in Transient Ischemic Attack and Minor Stroke Patients. Cerebrovascular diseases 2014;37(suppl 1): p156 Platform.

163. Dubuc V, Hill MD, Aram H, **COUTTS SB**. NIHSS should not be used for outcome assessment in TIA and minor stroke studies. Cerebrovascular diseases 2014;37(suppl 1): p159 Platform.

49th Annual Congress of the Canadian Neurological Sciences Federation, Banff, Alberta, Canada.

164. Dubuc V, Mandzia JL, Hill MD, Kenney C, **COUTTS SB**. Thrombolysis for minor ischemic stroke with proven acute symptomatic occlusion using TNK-tPA (TEMPO-1). CJNS 2014;41:3 (Suppl 1) S40. Poster.

Campus Alberta Student Conference on Health (Banff, Canada) September 2014.

165. Prinsie JC, Fiest KM, Patten SB, Atta C, Blaikie L, Bulloch AGM, **COUTTS SB**, Demchuk A, Hill MD, Smith EE, Jette N. Validating Screening Tools for Depression in Stroke. Campus Alberta Student Conference on Health (Banff, Canada) September 2014.

5th Canadian Stroke Congress, Vancouver, British Columbia, Canada. October 2014

166. COUTTS SB, Barber P, Cole-Haskayne AL, Kashyap D, Dubuc V, Engbers J, Demchuk A, Hill MD, Suddes M. CT Angiography(CTA) Based Triage of TIA Patients is Safe and Reduces Hospital Admissions. Stroke 2014;45:e248. Platform

167. Cole-Haskayne AL, Pushie A, Gairdner S, **COUTTS SB**, Demchuk AM. The Use of Cardiac Event Monitoring in Ambulatory Care for the Detection of Atrial Fibrillation. Stroke 2014;45:e281. Poster.

World Stroke Congress, Istanbul, Turkey. October 2014.

168. COUTTS SB, Barber PA, Cole-Haskayne A, Demchuk AM, Dubuc V, Engbers J, Hill MD, Kashyap D, Suddes M for the Calgary Stroke Program. CT Angiography(CTA) Based Triage of TIA Patients is Safe and Reduces Hospital Admissions. International Journal of Stroke. 2014;9 (Suppl. 3):304.

40th International Conference on Stroke and Cerebral Circulation, Nashville, TN, USA (2/2015).

169. COUTTS SB, Dubuc V, Mandzia JL, Kenney C, Goyal M, Hill MD for the TEMPO-1 investigators. Final results of the thrombolysis for minor ischemic stroke with proven acute symptomatic occlusion using TNK-tPA (TEMPO-1) trial. Stroke. 2015; 46: A160. Platform.

1st European Stroke Organisation Conference, Glasgow, Scotland (4/2015).

170. COUTTS SB, Dubuc V, Mandzia J, Kenney C, Demchuk AM, Smith EE, Subramaniam S, Goyal M, Patil S, Menon BK, Barber PA, Dowlathshahi D, Field T, Asdaghi N, Camden MC, Hill MD for the TEMPO-1 investigators. Tenecteplase–Tissue-Type Plasminogen Activator Evaluation for Minor Ischemic Stroke With Proven Occlusion. Poster.

171. Blayney S, Hill MD, Barber PA, Demchuk AM, Engbers JD, **COUTTS SB**. Triage of TIA clinic referrals using clinical features identifies true vascular events. Poster.

EDUCATIONAL ACTIVITIES

Student Supervision

May-August 2002: Supervision of Undergraduate Summer Student: Derek Beaupre, Faculty of Medicine, University of Alberta.

May-August 2002 and May-August 2003: Undergraduate Summer Student Andrea Krol Faculty of Science, University of Calgary.

2008: Co-Supervisor of Sarah Tymchuk. Masters student. Quantitative perfusion and prediction of outcome in TIA and minor stroke patients.

2009-2010: Co-supervisor of Wesley Chan. Bachelors of Health Sciences undergraduate honour project. Sleep apnea in minor stroke and TIA. Successfully defended April 2010.

2009-2011: Supervisor of Shiel Patel. Masters student. Relationship of white matter disease and sleep apnea in minor stroke and TIA patients. MSc successfully defended June 2011.

2010-2014 : Co-Supervisor of Susan Van Rheenen. Geographical differences in Stroke rates in Alberta. PhD successfully defended December 2014.

May-August 2010: Supervision of Undergraduate Summer Student Manya Bernbaum who received a Canadian Stroke Network Summer studentship award \$7000.

2010-2012: Co-supervisor of Neuroscience Masters student Jaquie Hodge. Corticospinal tract integrity and motor outcome in perinatal stroke. MSc successfully defended December 2012

September 2010- April 2011: Co-supervision of Catherine Godzwon. Undergraduate

psychology honours thesis. Relationship between cognitive function and obstructive sleep apnea. Successfully defended April 2011
May 2011-August 2011: Supervision of Undergraduate Summer Student Catherine Godzwon who received an AHFMR summer studentship (\$6000). Relationship between cognitive function and obstructive sleep apnea.
2011-2013: Supervisor of Manya Bernbaum. Masters in Neuroscience student. MSc successfully defended July 2013.
2012: Supervision of Summer Student Shiel Patel who received a Canadian Stroke Network Summer studentship award \$7000.
2012: Supervision of summer student Jonathan Coulter.
2015-2017 Supervisor of Dr Amy Yu. Masters in Health Services Research, Department of Community Health Sciences. Obtained QUICR fellowship award to complete her research. \$50,000 per year for 2 years.
2015: Supervision of Summer Student Zach Hong who received an Alberta Innovates Summer Studentship award.

Undergraduate Teaching

August 2004: Faculty of Medicine, Functional Neuroscience course, Neuroanatomy demonstrator.
August/September 2007: Medical Student Neuroscience clinical core course preceptor.
September 2007: Medical Student Neuroscience course – Stroke day lecture.
August/September 2008: Medical Student Neuroscience clinical core course preceptor.
September 2008: Medical Student Neuroscience course – Stroke day lecture.
August/September 2009: Medical Student Neuroscience clinical core course preceptor.
September 2009: Medical Student Neuroscience course – Stroke day lecture.
August/September 2010: Medical Student Neuroscience clinical core course preceptor.
September 2010: Medical Student Neuroscience course – Stroke day lecture.
August/September 2011: Medical Student Neuroscience clinical core course preceptor.
August/September 2012: Medical Student Neuroscience clinical core course preceptor.
August/September 2014: Medical Student Neuroscience clinical core course preceptor.
August/September 2015: Medical Student Neuroscience clinical core course preceptor.

Resident/ Fellow teaching

March 2007: Canadian Stroke consortium annual residents review course, Toronto. High risk TIA lecture and MRI small group teaching session.
March 2008: Canadian Stroke consortium annual residents review course, Montreal. High risk TIA and imaging small group teaching session.
April 2009: Canadian Stroke consortium annual residents review course, Winnipeg. High risk TIA and imaging small group teaching session.
September 2009: TIA and minor stroke. Resident small group seminars. University of Calgary.
March 2012: Canadian Stroke consortium annual residents review course, Toronto. High risk TIA lecture and CT small group teaching.

PROFESSIONAL MEMBERSHIPS

American Stroke Association
American Academy of Neurology
Canadian Stroke Consortium
Canadian Neurological Society
College of Physicians and Surgeons of Alberta
General Medical Council (UK)
International Stroke Society
College of Physicians and Surgeons of Glasgow, UK
World Stroke organisation

PROFESSIONAL ACTIVITY

Ad hoc reviewer for the following journals:

American Journal of Neuroradiology, Stroke, Canadian Journal of Neurological Sciences, Canadian Journal of Emergency Medicine, Canadian Medical Association Journal, Brain, British Medical Journal, The Lancet, Annals of Neurology, European Journal of Neurology, International Journal of Stroke, Lancet Neurology, NeuroImage, Expert Review of Neurotherapeutics, Journal of Stroke and Cerebrovascular diseases, Expert Review of Cardiovascular Therapy, Neurology, Journal of the American Heart Association (JAHA), Journal of the American Medical Association (JAMA), Journal of Neurology, Nature reviews Neurology, Journal of the American Medical Association and Journal of Neurology, Neurosurgery and Psychiatry.

Grant review panels

2009: Review panel member for Heart and Stroke Foundation of Canada, Junior personnel Committee (Junior awards).

2010 May/ December. Review panel member. CIHR Neurosciences C panel.

2010– 2012 Review panel member. HSFC review panel 1b. Clinical cardiovascular and cerebrovascular research: mechanistic studies and clinical trials / health services research committee.

2014 Review panel member. HSFC review panel 1a. Clinical cardiovascular and cerebrovascular research: mechanistic studies and clinical trials / health services research committee.

Meeting abstract reviewer

2011-2013 Abstract reviewer for “diagnosis” panel for the International Stroke Meeting.

Ad hoc external reviewer

Ad hoc external reviewer for The Chief Scientist Office Experimental and Translational Medicine Research Committee (Scotland).

Ad hoc external reviewer for the Ontario Stroke System Review committee.

Ad hoc external reviewer for the Neurological Foundation of New Zealand.

Canadian Stroke Best practice Guidelines

Secondary Prevention Task Group 2011-2013 Committee Chair

Secondary Prevention Task Group 2013-2015 Committee Chair

Stroke Recognition and response recommendations 2013-2015. Committee Member.

Canadian Stroke Consortium

2012- Member research committee

LEADERSHIP RESPONSIBILITIES

2009 - 2015 Neurology Division ARP executive committee member

2012 - 2017 HSF-HBI Professorship in Stroke Research advisory committee

2012 – Ongoing Medical Director, Stroke Prevention Clinic, Foothills Medical Centre

2012 – 2013 Hotchkiss Brain Institute Clinical Research Unit (CRU) depute chair.

2013 – HSF Alberta Research Advisory Committee

2013- Member Alberta Cardiovascular and Stroke Strategic Clinical Network TIA working group.

RESEARCH SUPPORT

1993: Scottish Home and Health Department. £900

1994: Pathological Society of Great Britain and Northern Ireland. £1000

1996: Cross Trust. £1500

2002: Heart and Stroke Foundation of Canada – Young Canadian Clinical Stroke investigator award: Post Doctoral Fellowship (clinical) \$47,500 (Canadian) per year for 3 years.

2002: Alberta Heritage Foundation for Medical Research post Doctoral fellowship incentive award: \$7000 (Canadian) per year for 3 years.

2003: Canadian Institute of Health Research. **Vascular Imaging of acute Stroke for Identifying predictors of clinical Outcome and recurrent ischemic events –VISION.**

Project officer: **COUTTS SB.**

Principal Investigator: Demchuk AM.

Total: C\$ 351,000

February 2008: University of Calgary starter grant.

CT And MRI in the Triage of TIA and minor Cerebrovascular events to identify High risk patients. (CATCH).

Principal investigator.

\$17995.

June 2008: Development grant for secondary stroke prevention system of care proposal. Joint funding initiative from Heart and Stroke Foundation of Canada, Canadian Stroke Network and Canadian Institute of Health research – Institute of Circulation and Respiratory health:
Nominated Principal investigator
\$5000.

October 2008 – September 2011: **CT And MRI in the Triage of TIA and minor Cerebrovascular events to identify High risk patients. (CATCH).**
Canadian Institute of Health Research.
Role: Principal investigator.
Total: \$368,393.

2008: Petro-Canada Young Innovator Award in Community Health. **Alberta Stroke Prevention in TIAs and mild strokes (ASPIRE).**
Principal investigator.
Total: \$25,000.

2008: Pfizer Cardiovascular research award. **CT And MRI in the Triage of TIA and minor Cerebrovascular events to identify High risk patients. (CATCH).**
Principal investigator.
Total: \$199,236.

April 2009 – March 2014. **Alberta Stroke Prevention in TIAs and mild strokes (ASPIRE).**
Secondary stroke prevention system of care grant. Joint funding initiative from Heart and Stroke Foundation of Canada, Canadian Stroke Network and Canadian Institute of Health research – Institute of Circulation and Respiratory health:
Nominated Principal investigator
Total: \$600,042.

July 2009 – June 2016: Alberta Heritage Foundation for Medical Research (AHFMR) Clinical Investigator award. \$1,174,250 over 7 years (including \$299,250 establishment grant).

July 2009 – June 2014: Heart and Stroke Foundation of Canada, Distinguished clinician Scientist Award. Joint award between HSFC, CIHR Institute of Circulatory and Respiratory Health, and AstraZeneca Canada Inc. \$500,000.

July 2009 – June 2014: CIHR new investigator award. \$300,000 (declined).

March 2011 **Diagnosis Of Uncertain-origin Benign Transient neurological symptoms. (DOUBT).**
Bridge funding from CIHR Institute of Circulatory and Respiratory Health.
Role: Principal investigator.
Total: \$93,615

September 2011 – August 2016 - **Diagnosis Of Uncertain-origin Benign Transient neurological symptoms. (DOUBT).**
Canadian Institute of Health Research.
Role: Principal investigator.
Total: \$594,855

October 2011- September 2014 - Title: **The NEurological diseasE and Depression Study (NEEDS) – addressing the burden, course and impact of depressive disorders in neurological conditions.**

Program: Alberta Health Services, Faculty of Medicine Team Grant Program (with additional support from the Hotchkiss Brain Institute)

Role: Co-investigator.

Nominated PI: N. Jetté

Co-PI: S. Patten

Total: \$450,000

June 2013-2017: **Reducing Stroke burden with hospital-ready biomarker test for rapid TIA triage.**

Program: Genome Canada's Large Scale Applied Research Project in Genomics and Personalized Health,

Role: Co-lead.

Total: \$4,878,969 from Genome Canada

INVITED ADDRESSES

2003 June: Royal College of Physicians and Surgeons of Glasgow. "Time is brain. Thrombolysis for Stroke. Retirement of Professor David H. Lawson – Chairman of the UK safety of Medicines committee.

2005 September: Department of Clinical Neurosciences Grand Rounds, University of Calgary. "Is a TIA really transient, or even ischemic and is a minor stroke actually minor?"

2006 March: Department of Neurology Grand Rounds, University of Ottawa Grand rounds. "Is a TIA really transient, or even ischemic and is a minor stroke actually minor?"

2007 March: Canadian Stroke Consortium annual residents review course, Toronto. "High risk TIA's".

2008 March: Canadian Stroke Consortium annual residents review course. The great debate: Motion: high risk TIA's should be admitted to hospital.

2008 March: University of Calgary Annual therapeutics course. Evidenced based secondary stroke prevention.

2008 April: Hotchkiss Brain Institute Annual Research day 2008. The use of MRI to predict outcome in TIA and minor stroke.

2008 May: European Stroke Conference. Invited speaker. Symposium on TIA at the European Stroke Conference. Controversy: imaging and TIA.

2008 May: Alberta provincial Stroke Strategy invited lecture series. Stroke and TIA mimics.

2008 October: Alberta Radiologists Society Annual Meeting. Imaging in TIA and minor stroke.

2008 October: Alberta Stroke Conference: Stroke and TIA mimics.

2008 April: Alberta Stroke Prevention in TIAs and mild strokes (ASPIRE). Alberta Provincial Stroke Strategy Telehealth presentation.

2009 April: Emergency Department research day: Alberta Stroke Prevention in TIAs and mild strokes (ASPIRE).

2009 June: Hotchkiss Brain Institute Science Café. The Rise of the Machines: MRI and Robots in 21st Century Stroke Care.

2009 June: Alberta Stroke Prevention in TIAs and mild strokes (ASPIRE) update. Alberta Provincial Stroke Strategy telehealth presentation.

2009 October: Ontario Stroke Day. Toronto, Ontario. Thrombolysis an update and perspectives on the future.

2009 October: National Stroke Conference. Toronto, Ontario. Triaging TIAs.

2009 November: Western Canada Stroke Day. Vancouver, British Columbia. TIA a neurological emergency.

2009 November: University of Calgary family practice CME update. What is a TIA?

2010 April: American Academy of Neurology Annual Meeting. Michael J. Pessin Award lecture. Risk Stratification and treatment of TIA and minor stroke.

2010 May: Risk Stratification and treatment of TIA and minor stroke. Stroke rounds Victoria, BC.

2010 June: 1st Canadian Stroke Congress: Identification and treatment of high risk TIA and minor stroke patients: acute prevention.

2010 November: Risk Stratification and treatment of TIA. Drumhellar, AB

2011 January: Alberta Provincial Stroke Strategy, Momentum and milestones. The TIA hotline/ ASPIRE project.

2011 February: American Stroke Association symposium, Stroke in the real world. One hour Photo: Imaging techniques available for the emergency physician.

2011 March: Calgary Family doctors Stroke update: TIA a neurological emergency.

2011 October: 2nd Canadian Stroke Congress. Which imaging modality to use to assess TIA and minor stroke?

2011 October: TIA and stroke. Update for family physicians. University of Calgary evening lecture series.

2012 January: Department of Clinical Neurosciences Grand Rounds, University of Calgary. Results of the CATCH study.

2012 February. American Heart Association, International Stroke Conference. Emerging imaging techniques to improve diagnosis and prognosis in TIA.

2012 December. Western Canada Stroke Day. Vancouver, British Columbia. Hyperacute assessment and management of TIA and minor stroke.

2013 February. American Heart Association, International Stroke Conference. Clinical progression and early recurrence: Is there anything we can do?

2013 March: Calgary Family doctors Stroke update: What the general practitioner needs to know about stroke and TIA.

2013 April: Canadian Women's Club. Preventing your stroke.

2013 April: University of Ottawa. Neuroscience grand rounds. Minor stroke and TIA. Where we are at and where we are going.

2013 November: Royal Prince Alfred Hospital, Sydney, NSW, Australia. "Triaging TIA and minor stroke using imaging".

2013 December: Royal Melbourne Hospital, Melbourne, Australia. Grand Rounds. "Imaging in TIA and minor stroke."

2013 December: John Hunter hospital, Newcastle, Australia. "Triaging TIA and minor stroke using imaging".

2014 January: National University Hospital, Singapore (NUHS). Neurology grand rounds. "Triaging TIA and minor stroke using imaging".

2014 February: George Institute, Sydney, NSW. Institute seminar. "Disability in TIA and minor stroke."

2014 July: "Triaging TIA and minor stroke using imaging". Institute of Neurological Sciences, Southern General Hospital, Glasgow, UK.

2014 October: TIA: What investigations to do when. Canadian Stroke Congress, Vancouver, BC

2014 October: Embolic Stroke of Uncertain Source. Canadian Stroke Congress, Vancouver, BC

2015 June: Triage and treatment of TIA and minor stroke. Chinese Stroke Association Meeting. Beijing, China

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