

David A. Seminowicz, PhD

Updated 2022-07-25

Professor

Department of Medical Biophysics
Schulich School of Medicine & Dentistry
University of Western Ontario
London, Ontario, Canada
dseminow@uwo.ca
<http://www.daslab.org/>
<https://twitter.com/daspainbrain>

POSITIONS

- 2022 - Professor
Department of Medical Biophysics
Schulich School of Medicine & Dentistry
Robarts Research Institute
Brain and Mind Institute
University of Western Ontario
- 2022 - Robarts Scientist
Robarts Research Institute
Schulich School of Medicine & Dentistry
University of Western Ontario
- 2021 - Professor (status-only)
Faculty of Dentistry
University of Toronto
- 2022 - Adjunct Professor (Dean's Faculty)
2016 - 2022 Associate Professor (ending January 31, 2022)
2010 - 2016 Assistant Professor
Department of Neural and Pain Sciences
School of Dentistry
University of Maryland Baltimore
- 2022 - Honorary Principal Research Scientist
2020 - 2022 Principal Research Scientist and Associate Professor
2018 - 2019 Honorary Principal Research Scientist
Neuroscience Research Australia (NeuRA)
- 2010 - Present Faculty Member
Program in Neuroscience, Graduate Program in Life Sciences
University of Maryland Baltimore

EDUCATION

- 2007 - 2010 Postdoctoral Fellow
Alan Edwards Centre for Research on Pain
McGill University, Montreal, Quebec
- 2002 - 2007 Ph.D.
Institute of Medical Science
University of Toronto, Toronto, Ontario
- 2002 - 2007 Collaborative Program in Neuroscience

University of Toronto, Toronto, Ontario

- 2002 - 2004 M.Sc. Program
Completed Transfer Oral Examination to enter Ph.D. program March 24, 2004
- 1997 - 2001 B.Sc. Honours
Major: Psychology Minor: Neuroscience
University of Guelph, Guelph, Ontario

HONORS/AWARDS/SCHOLARSHIPS

- 2017 Visiting Scientist, Center for Neuroplasticity and Pain, Aalborg University, Denmark (3-month fellowship)
- 2017 International Visiting Fellow, Western Sydney University, Australia (7-week fellowship)
- 2012 Ronald Dubner Research Prize presented at the IASP 14th World Congress on Pain in Milan, Italy
- 2012 John C. Liebeskind Early Career Scholar Award, presented at the American Pain Society 31st Annual Scientific Meeting in Hawaii
- 2010 Kresimir Krnjevic Award: best basic science paper in Anaesthesia
- 2010 McGill Faculty of Dentistry Research Day: best presentation in basic science
- 2009 - 2010 Travel award: American Pain Society
- 2007 - 2010 Travel award: Quebec Pain Research Network
- 2009 McGill Pain Day, best basic science poster award
- 2008 Society for Neuroscience Next Generation Award, presented at SfN's 38th Annual Meeting in Washington, DC
- 2007 - 2010 Postdoctoral Fellowship, CIHR. Value \$40 000 plus \$5000 p.a. research allowance
- 2007 Nomination by former graduate department: Canadian Association for Graduate Studies and University Microfilms International for best PhD dissertation of 2006
- 2005 - 2007 Graduate Scholarship: NSERC Canadian Graduate Scholarship, Value \$35 000 p.a.
- 2006 Travel award: Organization for Human Brain Mapping
- 2003 - 2005 Graduate Scholarship NSERC PGS-A. Value \$17 800 p.a.
- 2003 Research Presentation: Toronto Western Research Inst Research Day: runner up
- 2003 Research Presentation: University Health Network Research Day: 1st Place
- 2003 Travel award: Canadian Association for Neuroscience
- 2002 Ontario Graduate Scholarship. Value \$15 000 p.a.
- 1998 - 2001 Dean's Honour list (Guelph)

RESEARCH GRANTS

Current

- 2021-2023 A Digital Therapeutics Platform for Neuromodulation of Pain Sensitivity. (co-I, PI Rothenberg) Maryland Innovation Initiative Award. \$150,000
- 2020-2028 Trigeminal Nociceptors: Neural Intersection of Chronic Pain and Alveolar Bone Remodeling. (co-I, PI Chung) NIDCR, NIH, R35 \$8,000,000
- 2020-2025 Novel Target Identification for Treatment of Chronic Overlapping Pain Using Multimodal Brain Imaging. (co-I, MPI Traub, Melemedjian) NIDCR, NIH, R01 \$2,495,000
- 2019-2023 Cerebral oscillations of pain. (PI) NINDS, NIH, R01 \$1,618,801
- 2019-2024 Validation of a novel cortical biomarker signature for pain. (PI; co-PI Schabrun) NINDS, NIH, R61/R33 \$1,668,993
- 2019-2024 Separate and Combined Effects of Mindfulness Meditation and Savoring on Pain-Related Corticostriatal Function. (PI; co-PI Finan) NCCIH, NIH, R61/R33 \$2,086,549
- 2019-2024 Neural correlates of hypoalgesia driven by observation. (co-I; PI L Colloca) NCCIH, NIH, R01 \$2,576,931

2016-2023 Sleep and Pain in Sickle Cell Disease. (co-I; PI Campbell) NHLBI, NIH, R01 \$2,698,475

Completed

2018-2021 The physiological basis of motor adaptation in pain. (co-PI (CIC); PI (CIA) SM Schabrun). NHMRC (Australia) \$317,214 AUD

2016-2020 Development of a reliable neurophysiological pain assessment tool: alpha as a predictive biomarker (APB). (PI) Purdue Pharma Investigator-Initiated Clinical Trial Agreement \$304,092

2018-2020 EEG-fMRI studies of pain and cognition. (PI). University of Maryland, Baltimore, Institute for Clinical & Translational Research Accelerated Translational Incubator Pilot (ATIP) \$50,000

2018-2020 Neuroimaging the influence of anxiety on chronic orofacial pain. (Sponsor; PI Payano Sosa). NIH/NIDCR \$38,444 p.a.

2013-2018 MRI outcomes of mindfulness meditation for migraine. (PI; co-I JA Haythornthwaite) NCCIH, NIH, R01 \$3,548,980

2015-2018 MRI outcomes of mindfulness meditation for migraine (Administrative Supplement). (PI; co-I JA Haythornthwaite) NCCIH, NIH, R01 \$64,000

2014-2017 Central nervous system mechanisms of burning mouth syndrome. (PI; co-I TF Meiller) NIDCR, NIH, R21 \$275,000

2015-2017 Central nervous system mechanisms of burning mouth syndrome (Diversity Supplement). (PI; co-I TF Meiller) NIDCR, NIH, R21 \$51,200

2015-2017 The role of the superior colliculus in migraine pathophysiology. (Co-I; co-PIs R Masri, R Quiton) UMB-UMBC Partner Challenge Track Award \$150,000

2015-2016 The Effects of Sleep Disturbance on Mesolimbic Reward System Function during Positive Affective Analgesia and Pain Offset. (co-I; PI P. Finan) Blaustein Award (Johns Hopkins University) \$28,987

2014-2015 Dissecting the Functional Organization and Significance of the Neural Circuitry of Pain. (co-I; PI AJ Shackman, co-I L Pessoa). Dean's Research Initiative (UM College Park) \$19,500

2014-2015 Neural and Genetic Correlates of Capsaicin Pain. (co-PI with JD Greenspan, SG Dorsey). University of Maryland Center to Advance Chronic Pain Research \$80,000

2013-2015 Effects of ongoing pain on cognitive-related functional connectivity: an electroencephalography (EEG) study in healthy subjects. (PI) IASP Collaborative Grant \$15,000

2013-2015 An fMRI study of estrogen-dependent visceral hypersensitivity following stress. (co-PI with RJ Traub) University of Maryland Organized Research Center (ORC) on Persistent Pain \$15,000

2010-2015 Can Therapy alter CNS Processing of Chronic Pain: A Longitudinal Study. (consultant; PI M.R. Naylor) R01 AR059674-01, NIH/NIAMS.

2012-2013 Brain networks in a rodent model of neuropathic pain. (PI) American Pain Society Future Leaders in Pain \$20,000

2011-2012 An fMRI study of burning mouth syndrome: the effects of persistent pain on brain activity related to cognition, experimental pain, and resting state networks. (PI) University of Maryland Organized Research Center (ORC) on Persistent Pain \$10,000

2009-2010 Glial-neuron interactions in chronic pain: Micro-PET studies. (co-I; PI Y. DeKoninck) Quebec Pain Research Network and Pfizer. \$129,000

- 2008-2010 Using fMRI to evaluate CBT treatment response for patients with chronic pain. (consultant; PI M.R. Naylor) R21 AR055716-01, NIH/NIAMS.
- 2008-2009 The effects of chronic pain on functional and structural brain networks. (\$20 000 for independent research). IASP Early Career Award Research Grants.
- 2007-2009 Determining the longitudinal changes in brain morphology and function associated with chronic pain in rat models of neuropathic pain. (co-I; PI M.C. Bushnell) Pfizer Neuropathic Pain Research Award \$149,840
- 2007-2008 Studies on the neuroanatomical, neurophysiological and biochemical effects of chronic low back pain. (co-I; PI L.S. Stone) Louise Edwards Foundation \$50,000

PREPRINTS (non-published)

1. Qadir H, Stewart BW, Van Ryzin JW, Wu Q, Chen S, **Seminowicz DA**, Mathur BN. (2022). The mouse claustrum synaptically connects cortical network motifs. bioRxiv 2022.03.31.486634
2. Chowdhury NS, Skippen P, Si E, Chiang A, Millard SK, Furman AJ, Chen S, **Seminowicz DA**, Schabrun SM. (2022). The reliability of two prospective cortical biomarkers for pain: EEG peak alpha frequency and TMS corticomotor excitability. mdRxiv 2022.03.05.22271797
3. Hunt C, Letzen J, Krimmel SR, Burrowes SAB, Haythornthwaite JA, Keaser M, Reid M, Finan P, **Seminowicz DA**. (2022) Meditation practice, mindfulness and pain-related outcomes in mindfulness-based treatment for episodic migraine. medRxiv 2022.01.20.22269474
4. Madden MB, Stewart BW, White MG, Krimmel SR, Qadir H, Barret FS, **Seminowicz DA**, Mathur B. (2022). A role for the claustrum in cognitive controls. PsyArXiv 2022.01.19
5. Hunt C, Letzen J, Krimmel SR, Burrowes SAB, Haythornthwaite JA, Finan P, Vetter M, **Seminowicz DA**. (2022) Is mindfulness associated with lower pain reactivity and connectivity of the default mode network? A replication and extension study in healthy and episodic migraine participants. medRxiv 2022.01.18.22269473
6. Furman AJ, Prokhorenko M, Keaser ML, Zhang J, Chen S, Mazaheri A, **Seminowicz DA**. (2021). Prolonged pain reliably slows peak alpha frequency by reducing fast alpha power. bioRxiv 2021.07.22.453260
7. Furman AJ, Raver C, Li Y, Jenne C, Hoffman K, **Seminowicz DA**, Keller A. (2021). Cortical 6-9 Hz oscillation are a reliable biomarker of persistent pain in rats. bioRxiv 2021.01.02.893289
8. Meeke TJ, Schmid AC, Keaser ML, Khan SA, Gullapalli RP, Dorsey SG, Greenspan JD, **Seminowicz DA**. (2021). Prolonged tonic pain in healthy humans disrupts intrinsic brain networks implicated in pain modulation. bioRxiv 740779
9. DeSouza DD, Krimmel SR, Sanjanwala BM, Peretz A, Menon V, **Seminowicz DA**, Cowan RP. (2020). Increased amygdala volume and functional connectivity with cognitive control networks in chronic migraine. mdRxiv 2020.08.31.20185397

PUBLICATIONS

1. Krimmel SR, DeSouza DD, Keaser ML, Sanjanwala BM, Cowan RP, Lindquist MA, Haythornthwaite JA, **Seminowicz DA**. (2022). Three dimensions of association link migraine symptoms and functional connectivity. Journal of Neuroscience. Online ahead of print.

2. Chowdhury NS, Rogasch NC, Chiang AKI, Millard SK, Skippen P, Chang WJ, Bilska K, Si E, **Seminowicz DA**, Schabrun SM. (2022). The influence of sensory potentials on transcranial magnetic stimulation – Electroencephalography recordings. *Clinical Neurophysiology*. 11:140:98-109.
3. Chowdhury NS, Chang WJ, Millard SK, Skippen P, Bilska K, **Seminowicz DA**, Schabrun SM. (2022). The effect of acute and sustained pain on corticomotor excitability: A systematic review and meta-analysis of group and individual level data. *The Journal of Pain*. Online ahead of print.
4. Meeker TJ, Schmid AC, Keaser ML, Khan SA, Gullapalli RP, Dorsey SG, Greenspan JD, **Seminowicz DA**. (2022). Tonic pain alters functional connectivity of the descending pain modulatory network involving amygdala, periaqueductal gray, parabrachial nucleus and anterior cingulate cortex. *Neuroimage*. 256:119278.
5. Millard S, Furman AJ, Kerr A, **Seminowicz DA**, Gao F, Naidu BV, Mazaheri A. (2022). Predicting postoperative pain in lung cancer patients using preoperative peak alpha frequency. *British Journal of Anaesthesia*. 128(6):e346-e348.
6. Xu H, **Seminowicz DA**, Krimmel SR, Shang M, Gao L, Wang L. (2022). Altered structural and functional connectivity of salience network in patients with classic trigeminal neuralgia. *The Journal of Pain*. Online ahead of print.
7. Krimmel SR, Keaser ML, Speis D, Haythornthwaite JA, **Seminowicz DA**. (2022). Migraine disability, pain catastrophizing, and headache severity are associated with evoked pain and targeted by mind-body therapy. *Pain*. Online ahead of print.
8. Burrowes SAB, Golubeva O, Keaser ML, Haythornthwaite JA, **Seminowicz DA**. (2021). Differences in gray matter volume in episodic migraine patients with and without prior diagnosis or clinical care: A cross-sectional study. *The Journal of Headache Pain*. 22(1): 127.
9. Payano Sosa JS, Da Silva JT, Burrowes SAB, Yoo SY, Keaser ML, Meiller TF, **Seminowicz DA**. (2021). Time of day influences psychophysical measures in women with burning mouth syndrome. *Frontiers in Neuroscience*. 15:698164.
10. Burrowes SAB, Golubeva O, Stafford K, McArdle PF, Goyal M, Peterlin BL, Haythornthwaite JA, **Seminowicz DA**. (2022). Enhanced mindfulness-based stress reduction in episodic migraine-effects on sleep quality, anxiety, stress, and depression: a secondary analysis of a randomized clinical trial. *Pain*. 163(3):436-444.
11. Meeker TJ, Schmid AC, Liu Y, Keaser ML, Dorsey SG, **Seminowicz DA**, Greenspan JD. (2021). During capsaicin-induced central sensitization, brush allodynia is associated with baseline warmth sensitivity, whereas mechanical hyperalgesia is associated with painful mechanical sensitivity, anxiety and somatization. *European Journal of Pain*. 25(9):1971-1993.
12. Oswald LM, Dunn KE, **Seminowicz DA**, Storr CL. (2021). Early life stress and risks for opioid misuse: Review of data supporting neurobiological underpinnings. *Journal Of Personalized Medicine*. 11(4):315.
13. Da Silva JT, Tricou C, Zhang Y, Tofighbakhsh A, **Seminowicz DA**, Ro JY. (2021) Pain modulatory network is influenced by sex and age in a healthy state and during osteoarthritis progression in rats. *Aging Cell*. 20(2):e13292.
14. **Seminowicz DA**, Bilska K, Chowdhury NS, Skippen P, Millard SK, Chiang AKI, Chen S, Furman AJ, Schabrun SM. (2020). A novel cortical biomarker signature for predicting pain sensitivity: Protocol for the PREDICT longitudinal analytical validation study. *Pain Reports*. 5(4):e833.
15. Furman AJ, Prokhorenko M, Keaser ML, Zhang J, Mazaheri A, **Seminowicz DA**. (2020). Sensorimotor peak alpha frequency is a reliable biomarker of pain sensitivity. *Cerebral Cortex*. 30(12):6069-6082.
16. Barrett FS, Krimmel SR, Griffiths RR, **Seminowicz DA**, Mathur BN. (2020). Psilocybin acutely alters the functional connectivity of the claustrum with brain networks that support perception, memory, and attention.

Neuroimage. 218:116980.

17. **Seminowicz DA**, Burrowes SAB, Kearson A, Zhang J, Krimmel SR, Samawi L, Furman AJ, Keaser ML, Gould N, Magyari T, White L, Goloubeva O, Goyal M, Peterlin BL, Haythornthwaite JA. (2020). Enhanced mindfulness based stress reduction in episodic migraine: A randomized clinical trial with MRI outcomes. *Pain*. 161(9):1837-1846.
18. Da Silva JT, Tricou C, Zhang Y, **Seminowicz DA**, Ro JY. (2020) Brain networks and endogenous pain inhibition are modulated by age and sex in healthy rats. *Pain*. 161(6):1371-1380.
19. Raghuraman N, Wang Y, Schenk LA, Furman AJ, Tricou C, **Seminowicz DA**, Colloca L. (2019). Neural and behavioral changes driven by observationally-induced hypoalgesia. *Scientific Reports*. 9(1):19760.
20. Letzen JE, Remeniuk B, Smith MT, Irwin MR, Finan PH, **Seminowicz DA**. (2020). Individual differences in pain sensitivity are associated with cognitive network functional connectivity following one night of experimental sleep disruption. *Human Brain Mapping*. 41(3):581-593.
21. Da Silva JT, **Seminowicz DA**. (2019). Neuroimaging of pain in animal models: A review of recent literature. *Pain Reports*. 4(4):e732.
22. Furman AJ, Thapa T, Summers SJ, Cavaleri R, Fogarty JS, Steiner GZ, Schabrun SM, **Seminowicz DA**. (2019). Cerebral peak alpha frequency reflects average pain severity in a human model of sustained, musculoskeletal pain. *Journal of Neurophysiology*. 122(4):1784-1793.
23. Hoegh M, **Seminowicz DA**, Graven-Nielsen T. (2019). Delayed effects of attention on pain sensitivity and conditioned pain modulation. *European Journal of Pain*. 23(10):1850-1862.
24. Larsen DB, Graven-Nielsen T, Hirata RP, **Seminowicz D**, Schabrun S, Boudreau SA. (2019). Corticomotor excitability reduction induced by experimental pain remains unaffected by performing a working memory task as compared to staying at rest. *Experimental Brain Research*. 237:2205-2215.
25. **Seminowicz DA**, Thapa T, Schabrun SM. (2019). Corticomotor depression is associated with higher pain severity in the transition to sustained pain: A longitudinal exploratory study of individual differences. *The Journal of Pain*. 20(12):1498-1506.
26. Meeke TJ, Keaser ML, Khan SA, Gullapalli RP, **Seminowicz DA**, Greenspan JD. (2019). Non-invasive motor cortex neuromodulation reduces secondary hyperalgesia and enhances activation of the descending pain modulatory network. *Frontiers in Neuroscience*. 13: 467.
27. Da Silva JT, Letzen JE, Haythornthwaite JA, Finan PH, Campbell CM, **Seminowicz DA**. (2019). Do chronic pain and comorbidities affect brain function in sickle cell patients? A systematic review of neuroimaging and treatment approaches. *Pain*. 160(9):1933-1945.
28. Burrowes SAB, Rhodes CS, Meeke TJ, Greenspan JD, Gullapalli RP, **Seminowicz DA**. (2020). Decreased grey matter volume in mTBI patients with post-traumatic headache compared to headache-free mTBI patients and healthy controls: A longitudinal MRI study. *Brain Imaging and Behavior*. 14(5):1651-1659.
29. Krimmel SR, White MG, Panicker MH, Barrett FS, Mathur BN, **Seminowicz DA**. (2019). Resting state functional connectivity and cognitive task-related activation of the human claustrum. *Neuroimage*. 196:59-67.
30. Krimmel SR, Qadir H, Hesselgrave N, White MG, Reser DH, Mathur BN, **Seminowicz DA**. (2019). Resting state functional connectivity of the rat claustrum. *Frontiers in Neuroanatomy*. 13:22.
31. **Seminowicz DA**, Remeniuk B, Krimmel SR, Smith MT, Barrett FS, Wulff AB, Furman AJ, Geuter S, Lindquist MA, Irwin MR, Finan PH. (2019). Pain-related nucleus accumbens function: modulation by reward and sleep disruption. *Pain*. 160(5):1196-1207.

32. Ayoub LJ, Barnett A, Leboucher A, Golosky M, McAndrews MP, **Seminowicz DA**, Moayed M. (2019). The medial temporal lobe in nociception: A meta-analytic and functional connectivity study. *Pain*. 160(6):1245-1260.
33. da Silva, JT, Evangelista, B, Venega, RAG, **Seminowicz DA**, Chacur M. (2019). Anti-NGF treatment can reduce chronic neuropathic pain by changing peripheral mediators and brain activity in rats. *Behavioural Pharmacology*. 30(1):79-88.
34. Letzen JE, **Seminowicz DA**, Campbell CM, Finan PH. (2019). Exploring the potential role of mesocorticolimbic circuitry in motivation for and adherence to chronic pain self-management interventions. *Neuroscience and Biobehavioral Reviews*. 98:10-17.
35. Qadir H, Krimmel SR, Mu C, Pouloupoulos A, **Seminowicz DA**, Mathur BN. (2018). Structural connectivity of the anterior cingulate cortex, claustrum, and the anterior insula of the mouse. *Frontiers in Neuroanatomy*. 12:100.
36. Wideman TH, Edwards RR, Walton DM, Martel MO, Hudon A, **Seminowicz DA**. (2019). The multi-modal assessment model of pain: A novel framework for further integrating the subjective pain experience within research and practice. *The Clinical Journal of Pain*. 35(3):212-221.
37. De Martino E, **Seminowicz DA**, Schabrun SM, Petrini L, Graven-Nielsen T. (2019). High frequency repetitive transcranial magnetic stimulation to the left dorsolateral prefrontal cortex modulates sensorimotor cortex function in the transition to sustained muscle pain. *Neuroimage*. 186:93-102.
38. Wang Y, Yang Q, Cao D, **Seminowicz D**, Remeniuk B, Gao L, Zhang M. (2019). Correlation between nerve atrophy, brain grey matter volume and pain severity in patients with primary trigeminal neuralgia. *Cephalalgia: An International Journal of Headache*. 39:515-525.
39. **Seminowicz DA**, de Martino E, Schabrun SM, Graven-Nielsen T. (2018). Left DLPFC rTMS reduces the development of long-term muscle pain. *Pain*. 159(12):2486-2492
40. Ayoub LJ, **Seminowicz DA**, Moayed M. (2018). A meta-analytic study of experimental and chronic orofacial pain excluding headache disorders. *Neuroimage Clinical*. 20:901-912
41. Muthulingam J, Olesen SS, Hansen TM, **Seminowicz DA**, Burrowes S, Drewes AM, Frøkjær JB. (2018). Progression of structural brain changes in patients with chronic pancreatitis and its association to chronic pain: A 7-year longitudinal follow-up study. *Pancreas*. 47(10):1267-1276.
42. Da Silva JT, Zhang Y, Asgar J, Ro J, **Seminowicz DA**. (2018). Diffuse noxious inhibitory controls and brain networks are modulated in a testosterone-dependent manner in Sprague Dawley rats. *Behavioral Brain Research*. 349:91-97.
43. Liao X, Mao C, Wang Y, Zhang Q, Cao D, **Seminowicz DA**, Zhang M, Yang X. (2018). Brain gray matter alterations in Chinese patients with chronic knee osteoarthritis pain based on voxel-based morphometry. *Medicine*. 97(12):e0145.
44. Furman AJ, Meeker TJ, Rietschel JC, Yoo SY, Muthulingam J, Prokhorenko M, Keaser ML, Goodman RN, Mazaheri A, **Seminowicz DA**. (2018). Cerebral peak alpha frequency predicts individual differences in pain sensitivity. *Neuroimage*. 167:203-210.
45. Keefe FJ, Ballantyne J, Blyth F, Coghill RC, Dickenson A, Dionne CE, Eccleston C, Finnerup NB, Kuner R, **Seminowicz DA**, Sluka K. (2018). Publishing the best basic and applied pain science: open science and PAIN. *Pain*. 159(3):405-406.
46. **Seminowicz DA**, Moayed M. (2017). The dorsolateral prefrontal cortex in acute and chronic pain. *The Journal of Pain*. 18(9):1027-1035
47. Wang Y, Cao DY, Remeniuk B, Krimmel S, **Seminowicz DA**, Zhang M. (2017). Altered brain structure and function associated with sensory and affective components of idiopathic trigeminal neuralgia. *Pain*. 158(8):1561-1570.
48. Davis KD, **Seminowicz DA**. (2017). Insights for clinicians from brain imaging studies of pain. *The Clinical Journal of Pain*. 33(4):291-294.

49. Mathur VA, Moayed M, Keaser ML, Khan SA, Hubbard CS, Goyal M, **Seminowicz DA**. (2016). High frequency migraine is associated with lower acute pain sensitivity and abnormal insula activity related to migraine pain intensity, attack frequency, and pain catastrophizing. *Frontiers in Human Neuroscience*. Sep 29;10:489.
50. Hubbard CS, Karpowicz JM, Furman AJ, da Silva JT, **Seminowicz DA**, Traub RJ. (2016). Estrogen-dependent visceral hypersensitivity following stress in rats: An fMRI study. *Molecular Pain*. Jun 17;12.
51. Alabwah Y, Ji Y, **Seminowicz DA**, Quiton RL, Masri R. (2016). Alcohol-triggered signs of migraine: An animal model. *Somatosensory & Motor Research*. 33(1):35-41
52. Shackman AJ, Fox AS, **Seminowicz DA** (2015). The cognitive-emotional brain: Opportunities and challenges for understanding neuropsychiatric disorders. *Behavioral and Brain Sciences*. 38:e86.
53. Walton DM, Elliott J, Lee J, Loh E, MacDermid J, Schabrun S, Siqueira WL, Corneil BD, Aal B, Birmingham T, Brown A, Cooper L, Dickey JP, Dixon SJ, Fraser D, Gati J, Gloor G, Good G, Holdsworth D, McLean SA, Millard W, Miller J, Sadi J, **Seminowicz DA**, Shoemaker JK, Siegmund G, Versteegh T, Wideman TH. (2016). Research priorities in the field of post-traumatic pain and disability: Results of a transdisciplinary consensus-generating workshop. *Pain Research & Management pii: 17143*.
54. **Seminowicz DA**, Čeko M (2015). Can we exploit cognitive brain networks to treat chronic pain? *Pain Management*. 5(6): 399-402
55. Čeko M, Gracely JL, Fitzcharles MA, **Seminowicz DA**, Schweinhardt PS, Bushnell MC (2015). Is a responsive default mode network required for successful working memory task performance? *Journal of Neuroscience*. 35(33):11595-11605.
56. Čeko M, Shir Y, Ouellet JA, Ware MA, Stone LS, **Seminowicz DA** (2015). Partial recovery of abnormal insula and dorsolateral prefrontal connectivity to cognitive networks in chronic low back pain after treatment. *Human Brain Mapping* 36(6):2075–2092.
57. Mathur VA, Khan SA, Keaser ML, Hubbard CS, Goyal M, **Seminowicz DA** (2015). Altered cognition-related brain activity and interactions with acute pain in migraine. *Neuroimage: Clinical*. 7:347-358.
58. Hubbard CS, Khan SA, Xu S, Cha M, Masri R, **Seminowicz DA** (2015). Behavioral, metabolic and functional brain changes in a rat model of chronic neuropathic pain: A longitudinal MRI study. *Neuroimage*. 107C:333-344.
59. Hubbard CS, Khan SA, Keaser ML, Mathur VA, Goyal M, **Seminowicz DA** (2014). Altered brain structure and function correlate with disease severity and pain catastrophizing in migraine patients. *eNeuro*. 1(1):e20
60. Khan SA, Keaser ML, Meiller TF, **Seminowicz DA** (2014). Altered structure and function in hippocampus and medial prefrontal cortex in patients with burning mouth syndrome. *Pain*. 155(8):1472-80.
61. Thompson SJ, Millecamps M, Aliaga A, **Seminowicz DA**, Low LA, Bedell BJ, Stone LS, Schweinhardt P, Bushnell MC (2014). Metabolic brain activity suggestive of persistent pain in a rat model of neuropathic pain. *Neuroimage*. 91:344-352.
62. **Seminowicz DA**, Shpaner M, Keaser ML, Krauthamer GM, Mantegna J, Dumas JA, Newhouse PA, Filippi C, Keefe FJ, Naylor MR (2013). Cognitive behavioral therapy increases prefrontal cortex gray matter in patients with chronic pain. *Journal of Pain*. 14(12):1573-1584.
63. Čeko M, **Seminowicz DA**, Bushnell MC, Olausson HW (2013) Anatomical and functional enhancements of the insula after loss of large primary somatosensory fibers. *Cerebral Cortex*. 23(9):2017-2024.
64. Liljencrantz, J, Bjornsdotter, M, Morrison, I, Bergstrand, S, Čeko M, **Seminowicz DA**, Cole, J, Bushnell MC, Olausson HW (2013). Altered C-tactile processing in human dynamic tactile allodynia. *Pain*. 154(2):227-34.
65. **Seminowicz DA**, Jiang L, Ji Y, Xu S, Gullapalli RP, Masri R (2012). Thalamocortical asynchrony in conditions of spinal cord injury pain in rats. *Journal of Neuroscience*. 32(45):15843-8.

66. Low LA, Millicamps M, **Seminowicz DA**, Naso L, Thompson SJ, Stone LS, Bushnell MC (2012). Nerve injury causes long-term attentional deficits in rats. *Neuroscience Letters*. 529(2):103-107.
67. Hughes JP, Chessell I, Malamut R, Perkins M, Bačkonja M, Baron R, Farrar JT, Field MJ, Gereau RW, Gilron I, McMahon SB, Porreca F, Rappaport BA, Rice F, Richman LK, Segerdahl M, **Seminowicz DA**, Watkins LR, Waxman SG, Wiech K, Woolf C (2012). *Annals of the New York Academy of Sciences*. 1255:30-44.
68. **Seminowicz DA**, Wideman TH, Naso L, Hatami-Khosroushahi Z, Fallatah, S, Ware MA, Jarzem P, Bushnell MC, Shir Y, Ouellet JA, Stone LS (2011). Effective treatment of chronic low back pain in humans reverses abnormal brain anatomy and function. *Journal of Neuroscience*. 31(20):7540-7550.
69. **Seminowicz DA**, Labus JS, Bueller JA, Tillisch K, Naliboff BD, Bushnell MC, Mayer EA (2010) Regional gray matter density changes in brains of patients with irritable bowel syndrome. *Gastroenterology*, 139(1):48-57.
70. Lebovits A, Hainline B, Stone LS, **Seminowicz DA**, Brunz JT, Rosenquist RW and Cowan P (2009). Struck from behind: Maintaining quality of life with chronic low back pain. *Journal of Pain*, 10(9):927-931.
71. **Seminowicz DA**, Laferriere AL, Millicamps M, Yu JSC, Coderre TJ, Bushnell MC (2009). MRI structural brain changes associated with sensory and emotional function in a rat model of long-term neuropathic pain. *Neuroimage*, 47(3):1007-1014
72. Legrain V, Damme SV, Eccleston C, Davis KD, **Seminowicz DA**, Crombez G (2009). A neurocognitive model of attention to pain: Behavioral and neuroimaging evidence. *Pain*, 144(3):230-232
73. Schweinhardt P, **Seminowicz DA**, Jaeger E, Duncan GH, Bushnell, MC (2009). The anatomy of the mesolimbic reward system: a link between personality and the placebo analgesic response. *Journal of Neuroscience*, 29(15):4882-4887
74. Taylor KS, **Seminowicz DA**, Davis, KD (2009). Two systems of resting state connectivity between the insula and cingulate cortex. *Human Brain Mapping*, 30(9):2731–2745
75. **Seminowicz DA** (2008). Acupuncture and the CNS: What can the brain at rest suggest? *Pain*, 136(3):230-231.
76. **Seminowicz DA**, Davis KD (2007). A re-examination of pain-cognition interactions: implications for neuroimaging. *Pain*, 130(1-2):8-13.
77. Kuchinad A, Schweinhardt P, **Seminowicz DA**, Wood PB, Chizh BA, Bushnell MC (2007). Accelerated brain gray-matter loss in fibromyalgia patients: Premature aging of the brain? *Journal of Neuroscience*, 27(15):4004-4007.
78. **Seminowicz DA**, Davis KD (2007). Pain enhances functional connectivity of a brain network evoked by performance of a cognitive task. *Journal of Neurophysiology*, 97(5):3651-3659.
79. **Seminowicz DA**, Davis KD (2007). Interactions of pain intensity and cognitive load: The brain stays on task. *Cerebral Cortex*, 17(6):1412-1422.
80. **Seminowicz DA** (2006). Believe in your placebo. *Journal of Neuroscience*. 26(17):4453-4454.
81. **Seminowicz DA**, Davis KD (2006). Cortical responses to pain in healthy individuals depends on pain catastrophizing. *Pain*, 120(3):297-306.
82. Davis KD, **Seminowicz DA** (2005). Response to Legrain et al. *Pain*, 114:526-527
83. Mayberg HS, Lozano AM, Voon V, McNeely HE, **Seminowicz D**, Hamani C, Schwalb JM, Kennedy SH (2005). Deep brain stimulation for treatment-resistant depression. *Neuron*, 45(3):651-660.
84. **Seminowicz DA**, Mikulis DJ, Davis KD (2004). Cognitive modulation of pain-related brain responses depends on behavioral strategy. *Pain*, 112(1-2):48-58.
85. **Seminowicz DA**, Mayberg HS, McIntosh AR, Goldapple K, Kennedy S, Segal Z, Rafi-Tari S (2004). Limbic-frontal circuitry in major depression: a path modeling metanalysis. *Neuroimage*, 22(1):409-418.

86. Keightley ML, **Seminowicz DA**, Bagby RM, Costa PT, Fossati P, Mayberg HM (2003). Personality influences limbic-cortical interactions during sad mood induction. *Neuroimage*, 20(4):2031-2039.
87. Krüger S, **Seminowicz D**, Goldapple K, Kennedy SH, Mayberg, HS (2003). State and trait influences on mood regulation in bipolar disorder: blood flow differences with an acute mood challenge. *Biological Psychiatry*, 54(11):1274-1283.
88. Peters M, Oeltze S, **Seminowicz D**, Steinmetz H, Koeneke S, Jäncke L (2002). Division of the corpus callosum into subregions. *Brain and Cognition*, 50(1):62-72

CONFERENCE PROCEEDINGS

1. **Seminowicz DA**, Pustilnik AC, Rigg S, Davis A, Davis KD, Greely H. (2015) Panel 1: Legal and Neuroscientific Perspectives on Chronic Pain, 18 J. Health Care L. & Pol'y 207-235.
2. Pustilnik AC, **Seminowicz DA**, Rigg S, Greenspan JD, Hoffman M, Kolber A, Pardo M. (2015) Panel 2: "Excess" Pain, Hyperalgesia, and the Variability of Subjective Experience, 18 J. Health Care L. & Pol'y 237-273.
3. **Seminowicz DA**, Pustilnik AC, Gioioso MK, Chandler J, Dinerstein R, Haythornthwaite JA, Wager TD. (2015) Panel 3: Chronic Pain, "Psychogenic" Pain, and Emotion, 18 J. Health Care L. & Pol'y 275-294.
4. Pustilnik AC, **Seminowicz DA**, Gioioso MK, Farah M, Gertner N, Tovino S. (2015) Panel 4: Translational Expectations and Issues: Making it Work in Practice, 18 J. Health Care L. & Pol'y 295-322.

INVITED & CONFERENCE TALKS

- | | |
|------------|---|
| 2022.05.11 | Multimodal examination of prolonged pain. Canadian Pain Society Annual Meeting, Montreal, Quebec, Canada. |
| 2021.04.26 | Brain imaging biomarkers for diagnosis and treatment of chronic pain. Virginia Commonwealth University. Online. |
| 2021.06.17 | The dorsolateral prefrontal cortex in acute and chronic pain. IASP 2021 Virtual World Congress on Pain. Online. |
| 2021.06.05 | Mindfulness meditation reduces headache frequency and increases cognitive efficiency in migraine. 2021 American Headache Society Virtual Annual Scientific Meeting. Online. |
| 2021.04.19 | Cortical biomarkers of chronic pain. Australian Pain Society 41st Annual Scientific Meeting. Online. |
| 2021.04.19 | Mindfulness meditation reduces headache frequency and increases cognitive efficiency in migraine. Australian Pain Society 41st Annual Scientific Meeting. Online. |
| 2020.12.02 | Functional MRI endpoints and EEG markers of chronic pain. IASP Virtual Series on Pain and Expo. Online. |
| 2020.05.19 | Can brain imaging help us to optimize chronic pain prevention and treatment? Grand Rounds: Spaulding Rehabilitation Network, Harvard Medical School. Online. |
| 2020.04.18 | Clinical and neuroimaging outcomes of enhanced mindfulness-based stress reduction for migraine. Center for Integrative Pain Neuroimaging (CiPNI), Martinos Center for Biomedical Imaging, Harvard Medical School. Online. |
| 2019.11.19 | Neuroimaging outcomes of mindfulness-based stress reduction for migraine disorder. Psychiatry Grand Rounds, Johns Hopkins University Department of Psychiatry. |
| 2019.03.12 | Cognitive and emotional effects of chronic pain on brain structure and function. Pain Adelaide, Adelaide, SA, Australia. |

- 2019.03.01 Neuroimaging of acute and chronic pain: Treatment outcomes and biomarker discovery, University of Virginia.
- 2018.11.28 Neuroimaging of acute and chronic pain: Discovery of biomarkers and treatment outcomes, Dean's Lecture Series, School of Dental Medicine, SUNY Stony Brook, NY.
- 2018.11.03 Neuroimaging studies of the claustrum in humans. Society for Claustrum Research, Salk Institute, La Jolla, CA.
- 2018.09.20 Solving pain by imaging the brain. Neuroscience Research Australia (NeuRA), Sydney.
- 2018.07.24 Non-pharmacological interventions for chronic pain and brain mechanisms of pain processing and reward in humans. University of Maryland Baltimore Brain Science Research Consortium Unit Research Retreat on Opioid Use Disorders. Baltimore, MD.
- 2018.03.18 MRI and EEG studies of ongoing pain. University of Calgary, Alberta, Canada.
- 2018.02.13 Neuroimaging studies of acute and chronic pain: Toward biomarkers and treatments. Washington University Saint Louis, MO.
- 2017.12.11 Neuroimaging the cognitive and emotional dimensions of acute and chronic pain: Toward biomarkers and treatments. Neuroscience Research Australia (NeuRA), Sydney.
- 2017.08.17 MRI and EEG studies of ongoing pain: Effects on cognitive, emotional, and sensory networks. Aalborg University Hospital, MechSense group, Denmark.
- 2017.08.16 Neuroimaging studies of the dorsolateral prefrontal cortex in acute and chronic pain. Aalborg University, SMI and CNAP groups, Denmark
- 2017.08.15 MRI and EEG studies of ongoing pain: Effects on cognitive, emotional, and sensory networks. Aarhus University, Denmark.
- 2017.03.23 fMRI and EEG studies of prolonged pain models: Effects on cognitive, affective, and sensory networks. Friedman Brain Institute, Icahn School of Medicine at Mount Sinai, NY, NY.
- 2017.02.21 Discovering emotional and cognitive brain network dysfunction in chronic pain with neuroimaging. University of South Australia, Adelaide, Australia.
- 2017.01.31 Discovering emotional and cognitive brain network dysfunction in chronic pain with MRI (and now EEG) in rats and humans. University of Western Sydney, Australia.
- 2016.10.27 Emotional brain network dysfunction in chronic pain: Translational MRI studies. University of Iowa.
- 2016.09.08 Emotional and cognitive brain network dysfunction in chronic pain: MRI studies in rats and humans. University of Iowa.
- 2016.04.08 Neuroimaging studies of cognitive network dysfunction in chronic pain. Canadian Pain Society Annual Meeting, Vancouver, British Columbia, Canada.
- 2016.04.08 Functional MRI studies in rodents to uncover the brain circuitry of chronic pain. Canadian Pain Society Annual Meeting, Vancouver, British Columbia, Canada.
- 2016.04.08 How stress and anxiety might make pain chronic. McGill University, Montreal, Quebec, Canada.
- 2015.11.05 Brain mechanisms of chronic pain: Longitudinal MRI studies in humans and rodents. Morgan State University, Baltimore, MD.
- 2015.09.25 Chronic low back pain: Preclinical and clinical perspectives. Pain Research Forum online webinar (panelist).

- 2015.09.21 Brain mechanisms of chronic pain: The role of cognitive networks. Owings Mills Dentistry Study group, Owings Mills, MD.
- 2015.07.26 Brain mechanisms of chronic pain: Longitudinal MRI studies in humans and rodents. American Physical Therapy Association Section on Research Retreat. Piecing Together the Pain Puzzle: The Biopsychosocial Model. Smithfield, RI.
- 2015.06.30 Chair and Panel Discussant for the Section on Pain and Emotion. Visible Solutions: How neuroimaging can help law re-envision pain. Center for Law, Brain, and Behavior of Massachusetts General Hospital and The Petrie-Flom Center for Health Law Policy, Biotechnology, and Bioethics of Harvard Law School, Cambridge, MA.
- 2015.05.26 Cognitive aspects of acute and chronic pain: 10 advances in 10 years. NIH Pain Consortium Annual Symposium, Bethesda, MD.
- 2015.04.27 Longitudinal neuroimaging studies of chronic low back pain, burning mouth syndrome, and migraine. Grand Rounds, Sinai Hospital, Baltimore, MD.
- 2015.03.25 Workshop Panelist: Developing a stakeholder-driven set of research priorities in musculoskeletal trauma, pain and recovery, University of Western Ontario, London, ON.
- 2014.12.05 Brain changes associated with ongoing pain, development of chronic pain, and interventions: Neuroimaging studies in humans and rodents. NIH/NIDA, Baltimore, MD.
- 2014.11.17 Prefrontal-subcortical circuitry in prolonged experimental pain and chronic pain conditions. Chair of Minisymposium: "Characterizing the roles of fronto-cingulo-subcortical circuits in pain, emotion, and cognition." Society for Neuroscience Annual Meeting, Washington, DC.
- 2014.10.08 Nature and Nurture: Individual factors shape our brain and pain experience - Implications for pain imaging diagnostics. IASP World Congress on Pain, Buenos Aires, Argentina.
- 2014.09.26 Brain changes associated with ongoing pain, development of chronic pain, and interventions: Neuroimaging studies in humans and rodents. Duquesne University, Pittsburgh, PA.
- 2014.05.21 Longitudinal MRI studies in rats: Mechanisms of ongoing pain and development of chronic pain. World Pharma Congress. Boston, MA.
- 2014.05.01 Chronic low back pain is a disease of the brain. American Pain Society Annual Meeting, Tampa, FL.
- 2014.04.15 Is brain plasticity in chronic pain clinically meaningful? University Medical Center, University of Utrecht, Utrecht, The Netherlands.
- 2013.11.01 Imaging how brain resting state activity changes with ongoing pain, development of chronic pain, and interventions. Blaustein Pain Conference, Johns Hopkins Neurology and Neurosurgery, Baltimore, MD
- 2013.10.03 Brain imaging of 'spontaneous' pain in humans and rats. International Symposium in Celebration of the 10th Anniversary of the Alan Edwards Centre for Research on Pain, Montreal, QC.
- 2013.09.17 Brain imaging of "spontaneous" pain and its role in understanding pain-cognition interactions. Academic Medical Center, Amsterdam, The Netherlands.
- 2013.05.31 DLPFC in acute and chronic pain. MGH Martinos Center, Boston, MA.
- 2013.05.13 How acute and chronic pain affect brain function and structure: Neuroimaging evidence in humans and rats. Society for Brain Mapping and Therapeutics 10th Annual Congress. Baltimore, MD.
- 2013.02.19 Brain imaging of "spontaneous" pain: fMRI in humans and rats. NIH Special interest group on pain. NIH campus, Bethesda, MD.

- 2012.05.25 Brain mechanisms of the cognitive, sensory and emotional sides of chronic pain. Canadian Physiotherapy Association Annual National Congress, Saskatoon, Saskatchewan
- 2012.05.19 Treating pain changes the brain: Evidence from functional and structural MRI. American Pain Society Annual Meeting, Honolulu, HI
- 2012.05.17 Neuroimaging in rodents to assess brain changes associated with the onset and maintenance of chronic pain. American Pain Society Annual Meeting, Honolulu, HI
- 2011.08.16 Brain mechanisms of the cognitive, sensory and emotional sides of chronic pain. NICOE, Bethesda, MD
- 2011.06.03 Rodent behavioral testing and rodent brain imaging. New York Academy of Sciences, Chronic Inflammatory and Neuropathic Pain, New York, NY
- 2011.04.11 Effective treatment of chronic low back pain reverses abnormal brain anatomy and function. Canadian Pain Society Annual Meeting, Niagara Falls, Ontario
- 2011.03.04 Brain Mechanisms of pain: Neuroimaging in rats and humans. Blaustein Pain Conference, Johns Hopkins Neurology and Neurosurgery, Baltimore, MD
- 2009.08.10 Effects of pain on rodent and human brains: evidence from functional and structural MRI, Center for Neurobiology of Stress, UCLA
- 2009.05.20 Emotion, cognition, and pain: Functional and structural MRI studies in rats and humans. Department of Neural and Pain Sciences, University of Maryland, Baltimore, MD
- 2009.03.31 L'expérience de la douleur: Les effets possibles du vieillissement. Centre de recherche de l'Institut universitaire de gériatrie de Montréal (CRIUGM), Québec
- 2009.03.23 The cognitive and emotional sides of pain. Grand Rounds, Wasser Pain Management Centre, Mount Sinai Hospital, Toronto, Ontario
- 2009.03.05 The cognitive and emotional sides of pain. Psychiatry Grand Rounds, University of Vermont College of Medicine, Burlington, VT
- 2008.09.22 Does chronic pain change the structure and function of brain networks? Special Interest Meeting: Symptom Perception and Interest Behaviour, Bellem, Belgium
- 2008.06.20 Why does pain change the brain? Research in humans and rodents Quebec Network of Junior Pain Investigators, Second Annual Conference, Sherbrooke, Québec
- 2008.01.17 Pain's close connection with cognition Alpine Brain Imaging Meeting, Champéry, Switzerland
- 2007.12.09 Does pain change the brain? Evidence from humans and rodents Astra-Zeneca/McGill Centre for Research on Pain Third scientific meeting. Montreal, Quebec
- 2007.11.15 Pain networks and the brain. McMaster University, Michael G. DeGroote Institute for Pain Research and Care, Hamilton, Ontario
- 2007.03.13 Network analysis for fMRI: Partial least squares and more Université de Montréal, connectivity working group, Montréal, Québec
- 2007.07.12 Comparison of voxel based morphometry and cortical thickness analysis Institut universitaire de gériatrie de Montréal, Québec

TEACHING

Graduate

GPILS 775 Interface of Pain, Affect, and Addiction	founder, co-director
GPLS 655 Advanced Neuroscience Investigations	module co-director: cognitive control
GPILS 630 Fundamentals of Biostatistics	lecturer
GPILS 641 Systems and Cognitive Neuroscience	lecturer
GPILS 645 Cell and Systems Physiology	lecturer
DBMS 642 Neuroscience of Pain	lecturer
CIPP 907 Research Ethics	lecturer

Dental

NPSC 512N Neuroscience	lecturer
NPSC 521A Neuroscience of Pain	lecturer and clinical translation conference leader
NPSC 518A Gross Anatomy	demonstrator (brain labs)
NPSC 518C Clinical Research Conferences	lecturer

COMMITTEES AND SERVICEUniversity of Maryland

2016-	Center to Advance Chronic Pain Research, Executive Committee
2016-2018	Maryland Exercise and Robotics Center of Excellence (MERCE), Internal Advisory Committee
2012-	Annual Maryland Neuroimaging Retreat co-organizer
2012-	Department of Neural and Pain Sciences Recruitment committee (member)
2011-2016	Program in Neuroscience Seminar Series Committee (member)
2013-2018	Program in Neuroscience Admissions Committee (member)
2013-2018	Program in Neuroscience Training Committee (member)
2016-2018	Program in Neuroscience Annual Retreat Committee (member)

Supervision*Graduate Supervision*

2022-	Chloe Cheung thesis committee (MSc mentor): Neuroimaging studies of pain and cognition
2022-	Somayah Mashatan thesis committee (PhD mentor): Decoding pain perception using EEG and simultaneous EEG-fMRI
2021-	Brent Stewart thesis committee chair (PhD mentor): Neuroimaging studies of pain, cognition, and the role of the claustrum
2020-	Sarah Margerison thesis committee chair (PhD mentor): The interaction of cingulate cortex activity, pain catastrophizing, and cognitive performance while experiencing pain
2020-	Maxwell Madden thesis committee
2020-	Samantha Millard thesis committee (PhD co-mentor) (Neuroscience Research Australia): Modulating pain sensitivity in humans
2019-	Katarzyna Bilska thesis committee (PhD co-mentor) (Neuroscience Research Australia): Biomarkers for pain
2017-	Andrew Furman thesis committee chair (PhD mentor): Peak alpha frequency: A biomarker of pain sensitivity
2015-2021	Samuel Krimmel thesis committee chair (PhD mentor): Finding islands of structure in a sea of variance: Dimensions of covariation between migraine symptoms and brain connectivity
2015-2018	Shana Burrowes thesis committee chair (PhD mentor): The effects of mindfulness based stress reduction on brain gray matter volume and psychosocial co-morbidities in episodic migraine patients
2014-2020	Janell Payano Sosa thesis committee chair (PhD mentor): Determining the neural correlates of burning mouth syndrome
2011-2013	Shariq Khan thesis committee (DDS Research mentor): Neuroimaging of burning mouth syndrome
2010-2017	Tim Meeker thesis committee (PhD co-mentor): Non-invasive motor cortex neuromodulation reduces secondary hyperalgesia and enhances activation of the descending pain inhibitory system

Post-Doctoral Supervision

- 2021- Luis Guillermo Hernandez Rojas (Post-doctoral mentor): Novel target identification for treatment of chronic overlapping pain using multimodal brain imaging
- 2019-2021 Patrick Skippen (Post-doctoral co-mentor): Validation of novel cortical biomarkers for pain
- 2019- Nahian Chowdhury (Post-doctoral co-mentor): Validation of novel cortical biomarkers for pain
- 2017-2019 Janelle Letzen (Post-doctoral co-mentor): Neuroimaging of sleep, pain, and reward circuits
- 2017-2021 Joyce Teixeira Da Silva (Post-doctoral mentor): Translational neuroimaging of pain in rodents and humans
- 2016-2017 Yuan Wang (Post-doctoral mentor): White matter imaging in migraine and orofacial pain
- 2015-2017 Bethany Remeniuk (Post-doctoral co-mentor): The brain reward system as a mechanism of the association of sleep and pain
- 2013-2016 Vani Mathur (Post-doctoral mentor): Neuroimaging of pain and cognition in migraine
- 2011-2015 Catherine Hubbard (Post-doctoral mentor): Brain structure and function in migraine patients

Advisory/Thesis/Defense

- 2021 Evgeny Osokin thesis committee (University of Toronto)
- 2021 Nesreen Alissa comprehensive exam committee
- 2019- Human Qadir, thesis committee
- 2017 Christina Tricou, advisory committee chair
- 2016 Matthew Panicker, defense committee
- 2016-2020 Natalie Hesselgrave, thesis committee
- 2013 Briana Carusillo, advisory committee
- 2015 Austin Ramsay, advisory committee
- 2013 Michael White, advisory committee

Neuroscience Research Australia

- 2020- Centre for Pain IMPACT, co-Director
- 2021- Seminar committee (member, seminar chair)
- 2020- Research committee (member)

Society/Organization

- 2021- International Association for the Study of Pain: Neuroimaging of Pain Special Interest Group (SIG) (co-chair)
- 2014- International Association for the Study of Pain Financial Aid Working Group
- 2012-2014 American Pain Society Basic Science Special Interest Group (SIG) (co-chair)
- 2012 American Pain Society Awards Committee (member)

Journals

- 2017- Section Editor: Pain Measurement and Imaging section for the journal Pain

McGill

- 2009-2010 Postdoc working group
- 2007-2010 Association of Postdoctoral Fellows: executive member
- 2007-2009 Council of Postgraduate Students Society: councilor
- 2008-2009 Council for Graduate and Postdoctoral Studies: postdoctoral representative
- 2007-2009 Brain Awareness Week Council: Montreal Brain Bee organizer

PROFESSIONAL TRAINING

- 2006 Teaching in Higher Education
University of Toronto
- 2004 - 2005 Teaching Assistants Training Program (TATP)

- University of Toronto
Received TATP certificate, May 2005
- 2003 - 2007 Trainee; CIHR Training Program: Pain: Molecules to Community
Attended pain training schools in Alton, Ontario, May 2003, San Lorenzo Del Escorial, Spain, June, 2004, and Gananoque, Ontario, May 2006, 2007
- 2002 fMRI Data Centre Summer Workshop in fMRI Informatics
Dartmouth College, Hanover, NH

RESEARCH

Areas of expertise

Functional and structural MRI in humans and rodents, EEG, human psychophysics, human cognition & emotion testing, development of behavioral testing programs, positron emission tomography, animal behavioral testing, histology, pharmacology

Interests

Neuroimaging, pain, cognition, network analysis, psychophysics, chronic pain, neuropathic pain, major depression, neuroanatomy, claustrum

PROFESSIONAL AFFILIATIONS

- University of Maryland Center to Advance Chronic Pain Research (UM CACPR): executive committee
- University of Maryland Center for Pain Studies: faculty
- International Association for the Study of Pain: member
- Organization for Human Brain Mapping: member
- Society for Neuroscience: member
- US Association for the Study of Pain: member
- American Pain Society: member (2010-2019)
- Society for Claustrum Research: member
- Canadian Pain Society: past member
- AOSpine: past member
- American Association for the Advancement of Science: past member
- Alan Edwards Centre for Research on Pain: past trainee member
- University of Toronto Centre for the Study of Pain: past trainee member
- Canadian Association for Neuroscience: past trainee member

PEER REVIEW

- 2020 Pain Section Editor (handled 178 manuscripts), Pain, J Pain, Neuroimage, Front Hum Neurosci, Cereb Cortex, Brain Stimulation, Pain Medicine
- 2019 Pain Section Editor (handled 144 manuscripts), Pain (2), J Pain (2), J Neurosci (2), NeuroImage (2), Eur J Pain, Pain Reps, Front Hum Neurosci, Hum Brain Mapp
- 2018 Pain Section Editor (handled over 100 manuscripts), eLife, Pain, J Pain, J Neurosci, NeuroImage, Brain Imaging Behav, J Clin Pain, Brain Behav Immun, Brain Research
- 2017 Pain Section Editor (handled over 50 manuscripts), Pain, J Pain (2), Neuroscience & Biobehavioral Reviews, Pain Reports, Headache, J Neurosci, NeuroImage
- 2016 Pain (2), guest section editor for Pain, J Neurosci (3), PLoS One, eLife
- 2015 J Neurosci (4), J Pain (4), Hum Brain Mapp (3), Pain, Pain Med, Biol Psychiatry, Neuroscience, Science, Brain (2), J Neurosci (3), Cephalalgia (2), Pain (4), J Pain (3), Cogn Affect Behav Neurosci, PNAS, Front Hum Neurosci (2), Neuroimage: Clinical (2), J Urology (2), Hum Brain Mapp
- 2013 Pain (6), Nat Comm, Hum Brain Mapp, J Neurosci, Neurorehabil and Neural Repair, J Neurophysiol, J Pain, Eur J Pain
- 2012 Pain (5), J Neurosci (3), Ergonomics SA, Neuroimage, Neuroimage: Clinical, NEJM
- 2011 Pain (6), PLoS One, Neuroimage, J Neurosci (2), Cerebral Cortex, Brain

2010 Pain (5)
 2009 Pain (4), Psychopharmacology, Biol Psychiatry, Hum Brain Mapp (2)
 2008 Pain, Can J Anesth
 2007 Pain (3), J Pain, J Neurophysiol

GRANT REVIEW

2021-03 NIH Study Section: ZAT1-SM (60), NCCIH Special Emphasis Panel: Promoting Research on Music and Health
 2020-06 2021 Raine Priming Grant Application: RPG02-21 (Australia)
 2019-11 NIH Study Section: ZAT1 JM (06), Special Emphasis Panel: NCCIH Training and Education
 2018-11 NIH Study Section: ZRG1-IFCN-B-02M, Special Emphasis Panel: Pain Mechanisms
 2018-09 University of Maryland ICTR voucher award
 2018-03 NIH Study Section: ZRG1 ETTN-C 10 B, Small Business: Clinical Neurophysiology, Devices, Neuroprosthetics, and Biosensors
 2017-07 NIH, NCCIH, training awards panel
 2016-08 Core 2016 Grant, Fonds National de la Recherche Luxembourg
 2016-04 Louise and Alan Edwards Foundation LAEF Grants
 2015-10 Mayday foundation grant
 2015-04 NIH, NIDDK MAPP Network limited and expansion study section
 2015-04 NIH, NCCIH, training awards panel
 2014-02 NIH, NIDDK MAPP Network limited and expansion study section
 2013-09 GCC CRF Pain Pilot Grant Applications (Cancer pain)
 2013-09 Wellcome Trust Fellowship
 2013-04 Melzack Fellowship (McGill AECRP)
 2011-12 Proposal for senior research professor position at Leuven University.

PATENTS

2019 Method for Predicting Pain Sensitivity. Publication Number: WO/2019/090041. Publication Date: 09.05.2019. International Application No.PCT/US2018/058889. International Filing Date: 02.11.2018. Inventors: David A. Seminowicz, Andrew J. Furman, Ali Mazaheri.

OTHER ACADEMIC ACTIVITIES

2014 Co-organizer and Moderator: Imaging the Brain, Changing Minds: Chronic Pain Neuroimaging and the Law. A conference held at the University of Maryland, Baltimore, April 24-25. Co-organized with Amanda Pustilnik, UM School of Law, and Mark Frankel, AAAS.
 2012- Co-organizer Maryland Neuroimaging Annual Retreat. Programs at <https://www.daslab.org/maryland-neuroimaging-retreat>

BOOK CHAPTERS

Seminowicz, D.A., Hubbard, C.S., Masri, R. (2015). Understanding pain mechanisms using rodent brain imaging: Opportunities and pitfalls. In The Brain Adapting with Pain. Apkarian, A.V. (Ed.). IASP Press.

Naylor, M.R., **Seminowicz, D.A.**, Somers, T.J., Keefe, F.J. 2012. Pain Imaging. In Handbook of Pain and Palliative Care: Behavioral Approaches for the Life Course. Moore, R.J. (Ed.), (pp 439-467). New York: Springer.

Millecamps, M., **Seminowicz, D.A.**, Bushnell, M.C., Coderre, T.J. 2012 The biopsychology of pain. In Handbook of Psychology, 2nd edition. Nelson, R.J., Mizumori, S.J.Y., Weiner, I.B. (Eds.), (pp 240-271). Hoboken, New Jersey: John Wiley and Sons.

ABSTRACTS

1. Hernandez L, Da Silva JT, Hanson S, Scott A, Ernst R, Melemedjian O, **Seminowicz DA**, Traub RJ. (2022) Sex differences in orofacial sensitivity, visceral sensitivity, and brain activity in an animal model of stress-induced pain hypersensitivity. *The Journal of Pain*, Volume 23, Issue 5, Supplement, 2022, Page 58
2. Finan P, Hunt C, Keaser M, Lerman S, Smith K, Bingham C, Barrett F, Zeidan F, Garland E, **Seminowicz DA**. (2022) Effects of savoring meditation on pain-related corticostriatal and positive emotional function. *The Journal of Pain*, Volume 23, Issue 5, Supplement, 2022, Pages 32-33
3. Hunt C, Lerman SF, Smith K, Keaser ML, Bingham C, Zeidan F, Garland EL, **Seminowicz DA**, Finan PH. (2022) Brief training in savoring meditation enhances non-dual awareness in rheumatoid arthritis patients. *The Journal of Pain*, Volume 23, Issue 5, Supplement, 2022, Page 55
4. Qadir H, Stewart B, VanRyzin J, Wu Q, Chen S, **Seminowicz DA**, Mathur B. (2021) The claustrum synaptically connects cortical cognitive network motifs in mouse. *Neuropsychopharmacology*, Volume 46, pages 369-518????
5. Hernandez L, Da Silva J, Hanson S, Scott AJ, Ernst DA, Melemedjian OJ, **Seminowicz DA**, Traub RJ. (2021). Sex differences in orofacial sensitivity, visceral sensitivity, and brain activity in an animal model of stress-induced pain hypersensitivity. Poster presented at: 51st Society for Neuroscience Meeting; Virtual.
6. Margerison S, Furman A, Krimmel S, Keaser M, Meeker TJ, **Seminowicz DA**. (2021). The interaction of cingulate cortex activity, pain catastrophizing, and cognitive performance while experiencing pain. Poster presented at: 51st Society for Neuroscience Meeting; Virtual.
7. Da Silva JT, Tricou C, Zhang Y, Ro JY, **Seminowicz DA**. (2019). Diffuse noxious inhibitory controls and brain networks are modulated in a testosterone dependent manner in Sprague Dawley rats. 11th Congress of the European Pain Federation, Valencia, Spain.
8. Da Silva JT, Tricou C, Zhang Y, Ro JY, **Seminowicz DA**. (2019). Sex and age effects on brain connectivity during diffuse noxious inhibitory control (DNIC). Maryland Neuroimaging Retreat, Baltimore, MD.
9. Krimmel S, Haythornthwaite J, **Seminowicz DA**. (2019). Identifying shared variance between resting state functional connectivity and migraine. Poster presented at: 25th Organization of Human Brain Mapping; Rome, Italy.
10. Da Silva JT, Zhang Y, Asgar J, Ro JY, **Seminowicz DA**. (2018). Diffuse noxious inhibitory controls and brain networks are modulated in a testosterone dependent manner in Sprague Dawley rats. Maryland Neuroimaging Retreat, Baltimore, MD.
11. Krimmel S, Mathur, BN, **Seminowicz DA**. (2018). Claustrum activation from cognitive load is modulated by pain. Poster presented at: 48th Society for Neuroscience Meeting; San Diego, CA.
12. Zhang J, Kearson A, Burrowes S, Samawi L, Peterlin BL, Goyal M, Haythornthwaite JA, **Seminowicz DA**. (2018). Effects of Sleep Quality, Pain Catastrophizing, Anxiety and Depression on Pain-Related Activation for Migraine Patients and Healthy Controls. 48th Society for Neuroscience Meeting; San Diego, CA.
13. Keller A, Raver C, **Seminowicz DA**, Furman A. (2018). Neural oscillations and biomarkers of chronic pain in the rat. 48th Society for Neuroscience Meeting; San Diego, CA.
14. Furman A, Krimmel S, Zhang J, Keaser M, Gullapalli R, **Seminowicz D**. (2018). The relationship of Sensorimotor Peak Alpha Frequency to regions across the brain is modulated by pain. 48th Society for Neuroscience Meeting; San Diego, CA.
15. Myslinski NR, **Seminowicz DA**. (2018). The 2018 United States regional brain bee championship. 48th Society for Neuroscience Meeting; San Diego, CA.

16. Da Silva JT, Zhang Y, Asgar J, Ro JY, **Seminowicz DA**. (2018). Diffuse noxious inhibitory controls and brain networks are modulated in a testosterone dependent manner in Sprague Dawley rats. 48th Society for Neuroscience Meeting; San Diego, CA.
17. Black JE, Zhang J, **Seminowicz DA**, Quiton RL. (2018). Differences in Pain Processing between Migraine Patients and Healthy Controls. IASP 17th World Congress on Pain, Boston, MA.
18. Krimmel S, Haythornthwaite J, **Seminowicz D**. (2018). Reduced deactivation of default mode network in episodic migraine patients. IASP 17th World Congress on Pain, Boston, MA.
19. Letzen JE, Remeniuk B, Smith MT, Irwin MR, Finan PH, **Seminowicz DA**. (2018). Individual Pain Sensitivity Is Associated with Altered Cognitive Network Functional Connectivity Following Experimental Sleep Fragmentation. IASP 17th World Congress on Pain, Boston, MA.
20. De Martino E, **Seminowicz D**, Schabrun S, Petrini L, Graven-Nielsen T. (2018). Left DLPFC rTMS counteracts the sensorimotor cortical excitability changes in the transition to sustained muscle pain. IASP 17th World Congress on Pain, Boston, MA.
21. Krimmel S, Keaser M, Haythornthwaite J, **Seminowicz DA**. (2017). Pathological functional connectivity and pain catastrophizing converge on the salience and cingulo-opercular networks. Society for Neuroscience 47th Annual Meeting, Washington, DC.
22. Liu Y, Keaser ML, Schmid AC, Meeker TJ, Dorsey SG, **Seminowicz DA**, Greenspan JD. (2017). Brush allodynia and mechanical hyperalgesia: Predictors and associations. Society for Neuroscience 47th Annual Meeting, Washington, DC.
23. Stockbridge MD, Furman AJ, Keaser ML, Payano Sosa JS, Padmala S, Fox AS, Pessoa L, Smith JF, **Seminowicz DA**, Shackman AJ. (2017). Anxiety, pain, and cognition are integrated in the brain. Society for Neuroscience 47th Annual Meeting, Washington, DC.
24. Silva JT, Evangelista B, Venega R, **Seminowicz DA**, Chacur M. (2017). Anti-NGF reverses pain behaviors and anterior cingulate cortex activation in a rat model of neuropathic pain. Society for Neuroscience 47th Annual Meeting, Washington, DC.
25. Ayoub LJ, Leboucher A, Golosky M, **Seminowicz DA**, McAndrews MP, Moayed M. (2017). Abnormal hippocampal connectivity in neuropathic chronic back pain. Society for Neuroscience 47th Annual Meeting, Washington, DC.
26. Whitman C, Remeniuk B, Pressman A, Irwin, MR, Smith, MT, **Seminowicz DA**, Finan PH (2017). Gray matter volume reductions in the thalamus and nucleus accumbens following acute sleep continuity disruption. Sleep 40 (suppl_1): A151-A152.
27. Burrowes S, Sours C, Meeker T, Greenspan J, Gullapalli R, **Seminowicz D** (2017). Cerebral grey matter changes associated with posttraumatic headache in mild traumatic brain injury patients: a longitudinal MRI study. 36th Annual Scientific Meeting of the American Pain Society, Pittsburgh, PA.
28. Black J, Zhang J, **Seminowicz D**, Quiton R (2017). Painful thermal stimulation to the face and arm produces different patterns of brain activity in migraine patients and controls. 36th Annual Scientific Meeting of the American Pain Society, Pittsburgh, PA.
29. **Seminowicz DA**, Krimmel S, Ramsey A, Silva J, Hesselgrave N, White M, Panicker M, Reser D, Mathur B. (2016). Functional connectivity of the claustrum in humans and rats at 7T MRI. Society for Neuroscience 46th Annual Meeting, San Diego, CA.
30. Moayed M, Mathur VA, Hubbard CS, Ceko M, **Seminowicz DA** (2016). White matter structure in chronic migraine is related to disease characteristics. Society for Neuroscience 46th Annual Meeting, San Diego, CA.

31. Kubick, A, Shpaner M, **Seminowicz DA**, La Rosa N, Bishop J, French A, McCallion E, Mantegna J, Keefe F, Naylor MR (2016). Neural and behavioral changes in coping with acute pain after cognitive behavioral therapy: A randomized control trial. Society for Neuroscience 46th Annual Meeting, San Diego, CA.
32. Burrowes SAB, Furman A, Samawi L, Keaser ML, Polley M, Haythornthwaite JA, **Seminowicz DA** (2016). Left dorsolateral prefrontal cortex grey matter volume is related to headache frequency and anxiety. Organization of Human Brain Mapping 22nd Annual International Conference Geneva Switzerland.
33. Burrowes SAB, Sours C, Meeker T, Greenspan JD, Gullapalli RP, **Seminowicz DA** (2016). Cerebral grey matter changes associated with posttraumatic headache in mild traumatic brain injury patients: A longitudinal MRI study. American Pain Society 35th Annual Scientific Meeting, Austin TX.
34. Mathur VA, Burrowes SAB, Keaser ML, Khan SA, Goyal M, **Seminowicz DA** (2015). Changes in pain-related brain activity following a mindfulness meditation intervention in chronic migraine are associated with reduced anxiety. Society for Neuroscience 45th Annual Meeting, Chicago, IL.
35. Payano Sosa JS, Meeker TJ, Khan SA, Meiller, TF, **Seminowicz, D** (2015). Hypothalamic functional connectivity in ongoing pain in healthy subjects and spontaneous pain in burning mouth syndrome. Society for Neuroscience 45th Annual Meeting, Chicago, IL.
36. **Seminowicz D**, Johani H, Yoo S, Masri R, Quiton RL (2015). Superior colliculus: A role in migraine? Society for Neuroscience 45th Annual Meeting, Chicago, IL.
37. Schmid AC, Meeker TJ, Zhu S, **Seminowicz DA**, Dorsey G, Greenspan JD (2015). Brush allodynia susceptibility is related to baseline heat pain sensitivity, regional blood flow differences, and sensitization-induced heat allodynia and mechanical hyperalgesia. Society for Neuroscience 45th Annual Meeting, Chicago, IL.
38. Silva JT, Evangelista B, **Seminowicz D**, Chacur M (2015). Does anti-NGF reverse symptoms of chronic neuropathic pain? Society for Neuroscience 45th Annual Meeting, Chicago, IL.
39. **Seminowicz D**, Myslinski NR, Richards LJ (2015). The 2015 international brain bee championship. Society for Neuroscience 45th Annual Meeting, Chicago, IL.
40. da Silva JT, Hubbard CS, Jiang L, Chacur M, **Seminowicz DA** (2015). Resting state fMRI study of pain-related brain changes in a rat model of chronic neuropathic pain. Overcoming Barriers to the Translation of Pain Research, Pittsburgh, PA.
41. Payano Sosa J, Khan SA, Meiller TF, **Seminowicz DA** (2015). Exploring hypothalamic functional connectivity in burning mouth syndrome patients. Overcoming Barriers to the Translation of Pain Research, Pittsburgh, PA.
42. Moayed M, Meeker TJ, Khan SA, **Seminowicz DA** (2014). The frontal polar cortex may encode the cognitive load of pain. Society for Neuroscience 44th Annual Meeting, Washington, DC.
43. Ceko M, Gracely JL, Fitzcharles MA, **Seminowicz DA**, Schweinhardt P, Bushnell M (2014). Task-negative network dysfunction in fibromyalgia patients is related to lack of modulation by cognitive load. Society for Neuroscience 44th Annual Meeting, Washington, DC.
44. Mathur VA, Khan SA, Hubbard CS, Keaser ML, Goyal M, **Seminowicz DA** (2014). Pain and cognitive neural processing in migraine and the influence of disease severity and pain catastrophizing. Society for Neuroscience 44th Annual Meeting, Washington, DC.
45. **Seminowicz DA**, Hubbard CS, Furman A, Karpowicz JM, Traub RJ (2014). An fMRI study of estrogen-dependent visceral hypersensitivity following stress in rats. Society for Neuroscience 44th Annual Meeting, Washington, DC.
46. Hubbard CS, Khan SA, Cha M, Masri R, **Seminowicz DA** (2014). A longitudinal functional MRI study of pain-related brain changes in a rat model of chronic neuropathic pain. 33rd Annual Scientific Meeting of the American Pain Society, Tampa, FL.

47. Hubbard CS, Khan SA, Keaser, ML, Goyal, M, **Seminowicz, DA** (2014). Gray matter abnormalities in migraine patients associated with disease chronicity, attack frequency, and intensity of migraine pain. 33rd Annual Scientific Meeting of the American Pain Society, Tampa, FL.
48. Hubbard CS, Khan SA, Cha, M, Masri, R, **Seminowicz, DA** (2013). Pain-related functional MRI brain changes in a rat model of chronic neuropathic pain. Society for Neuroscience 43rd Annual Meeting, San Diego, CA.
49. **Seminowicz, DA**, Ceko, M, Shir, Y, Ouellet, JA, Stone, LS (2013). Treating chronic low back pain restores insula resting state functional connectivity. 19th Annual Meeting of the OHBM, Seattle, WA.
50. Meecker TJ, Khan SA, Keaser ML, Gullapalli RP, **Seminowicz, D** (2013). ICA of Resting Brain Networks Reveals Cingulate-Insula Network during Persistent Pain. 19th Annual Meeting of the OHBM, Seattle, WA.
51. Stone LS, Tajerian M, Danco A, Miyagi M, Shir Y, **Seminowicz DA**, Ouellet, J, Szyf, M, Millecamps, M (2013). Intervertebral Discs, Neuroplasticity and Low Back Pain: Pre-Clinical and Clinical Perspectives. 86th Annual Meeting of the Japanese Orthopaedic Association, Hiroshima, Japan.
52. Khan S, Keaser M, Meiller T, **Seminowicz D** (2013). A preliminary fMRI study on the effects of burning perception on cognitive-related brain networks in burning mouth syndrome patients. 32nd Annual Scientific Meeting of the American Pain Society, New Orleans, LA.
53. Meecker TJ, Khan SA, Keaser ML, Gullapalli RP, **Seminowicz D**. (2012). Widespread disruption of the default mode and dorsal attention resting state networks during persistent pain. Society for Neuroscience 42nd Annual Meeting, New Orleans, LA.
54. Liljencrantz J, Ceko M, **Seminowicz D**, Bushnell CM, Olausson H, Bjornsdotter M (2012). Distinct perception and insular processing of nociceptive and C-tactile stimulation in an A-beta denervated subject. Society for Neuroscience 42nd Annual Meeting, New Orleans, LA.
55. Shpaner M, **Seminowicz D**, Keaser M, Mantegna J, Dumas J, Filippi C, Lieberman G, Naylor MR (2012). Anatomical and functional changes following cognitive behavioral therapy in patients with chronic musculoskeletal pain. Society for Neuroscience 42nd Annual Meeting, New Orleans, LA.
56. **Seminowicz DA**, Jiang L, Masri R (2012). Thalamocortical Asynchrony in Conditions of Spinal Cord Injury Pain. IASP 14th World Congress on Pain, Milan, Italy.
57. Thompson SJ, Aliaga A, Millecamps M, Low LA, Stone LS, **Seminowicz D**, Bedell BJ, Bushnell MC (2012). Nerve injury leads to spontaneous activity in somatosensory cortex of the awake but not anesthetized rat. IASP 14th World Congress on Pain, Milan, Italy.
58. Low LA, Saragosti D, **Seminowicz DA**, Millecamps M, Thompson SJ, Stone LS, Bushnell MC (2012). Chronic pain-induced astrogliosis in rat frontal cortex is associated with anxiety-like behavior. IASP 14th World Congress on Pain, Milan, Italy.
59. Liljencrantz J, Bjornsdotter M, Morrison I, Bergstrand S, Ceko M, **Seminowicz D**, Cole J, Bushnell CM, Olausson H (2012). Altered C-tactile processing in human dynamic tactile allodynia. IASP 14th World Congress on Pain, Milan, Italy.
60. Jiang L, Greenspan J, Ji Y, Keaser M, **Seminowicz D**, Masri R, Zhan W (2012). Pain Relief Mechanism of Motor Cortex Stimulation: an fMRI Activation and Connectivity Study. 18th Annual Meeting of the OHBM, Beijing, China.
61. **Seminowicz D**, Jiang L, Ji Y, Keaser M, Masri RM (2011). Resting state fMRI in a rat model of spinal cord injury neuropathic pain: A longitudinal study. Society for Neuroscience 41st Annual Meeting, Washington, DC.
62. Jiang L, Ji Y, Keaser M, **Seminowicz DA**, Greenspan JD, Masri RM (2011). Mechanisms of pain relief following motor cortex stimulation: An fMRI study. Society for Neuroscience 41st Annual Meeting, Washington, DC.

63. Naylor M, Krauthamer M, **Seminowicz D**, Dumas J, Mantegna J, Perelman H, McCallion E, Filippi, Paul Newhouse C (2011). Structural and Functional Treatment effects of Cognitive Behavioral Therapy in Chronic Pain. 17th Annual Meeting of the OHBM, Quebec, QC.
64. Liljencrantz J, Ceko M, **Seminowicz D**, Bushnell MC, Olausson H (2011). Topical heat/capsaicin reduces processing of C-tactile afferent stimulation: A new hypothesis for the pathophysiology of tactile allodynia? Joint British Pain Society-Canadian Pain Society Meeting, Edinburgh, UK.
65. Low LA, **Seminowicz DA**, Thompson SJ, Naso L, Millecamps M, Stone LS, Bushnell MC (2011). Chronic neuropathic pain in rats causes long-term increases in anxiety-like behaviours and deficits in attentional abilities. Joint British Pain Society-Canadian Pain Society Meeting, Edinburgh, UK.
66. **Seminowicz DA**, Wideman TH, Naso L, Hatami-Khosroushahi Z, Fallatah S, Ware MA, Jarzem P, Ouellet JA, Shir Y, Bushnell MC, Stone LS (2010). Treating chronic low back pain reverses structural brain changes. IASP 13th World Congress on Pain, Montreal, QC.
67. Ceko M Lapedis M, Fitzcharles MA, **Seminowicz DA**, Schweinhardt P, Bushnell MC (2010). Fibromyalgia is associated with thinning and altered functional connectivity of the prefrontal cortex. IASP 13th World Congress on Pain, Montreal, QC.
68. Labus JS, **Seminowicz D**, Tillisch K, Bueller J, Naliboff B, Bushnell C, Mayer E (2010). Differential effects of trait and symptom-specific anxiety on brain morphometry healthy controls (HCS) and people with irritable bowel syndrome (IBS). IASP 13th World Congress on Pain, Montreal, QC.
69. Millecamps M, **Seminowicz DA**, Laferriere AL, Kocsis P, Coderre TJ, Stone LS, Bushnell MC (2010). Histological changes associated with prefrontal cortex atrophy in a rodent model of long term neuropathy. IASP 13th World Congress on Pain, Montreal, QC.
70. Wideman TH, **Seminowicz DA**, Naso L, Hatami-Khosroushahi Z, Fallatah S, Shir Y, Ware MA, Anderson KM, Jarzem P, Ouellet JA, Stone LS (2010). Differential effects of surgical intervention for low back pain on psychosocial and physical factors. AOSpine World Forum for Spine Research, Montreal., QC.
71. **Seminowicz DA**, Wideman TH, Ouellet JA, Jarzem P, Shir Y, Ware MA, Fallatah S, Naso L, Hatami Z, Bushnell MC, Stone LS (2010). Altered cognitive task-related and resting state fMRI activity associated with chronic low back pain. 16th Annual Meeting of the OHBM, Barcelona, Spain.
72. Erpelding N, Moayed M, **Seminowicz D**, Crawley A, Davis K (2010). Cortical grey matter reflects fMRI pain responses and cognitive modulation strategies during pain. 16th Annual Meeting of the OHBM, Barcelona, Spain.
73. Ceko M, **Seminowicz D**, Olausson H, Bushnell MC (2010). Increased Connectivity of the Insular Cortex in a Female Lacking Large Myelinated Afferents. 16th Annual Meeting of the OHBM, Barcelona, Spain.
74. Labus JS, **Seminowicz D**, Tillisch K, Bueller J, Naliboff B, Bushnell C, Mayer E (2010). Influence of trait anxiety on brain morphometry. 16th Annual Meeting of the OHBM, Barcelona, Spain.
75. **Seminowicz DA**, Wideman TH, Naso L, Hatami-Khosroushahi Z, Ouellet JA, Shir Y, Fallatah S, Stone LS (2010). A longitudinal study of the effects of treatment for chronic low back pain (cLBP) on brain function and structure: preliminary behavioural findings. 29th Annual Scientific Meeting of the American Pain Society, Baltimore, MD.
76. Ceko M, **Seminowicz DA**, Olausson H, Bushnell MC (2010). Anatomical and functional brain networks in a female lacking large myelinated afferents. Salk-IPSEN Symposium on Biological Complexity, La Jolla, CA.
77. Labus JS, **Seminowicz DA**, Vianna E, Tillisch K, Naliboff BD, Bushnell MC, Mayer EA (2009). Trait anxiety-associated structural brain networks: A comparison between irritable bowel syndrome patients and healthy controls. ACNP 48th Annual Meeting, Hollywood, FL.

78. **Seminowicz DA**, Bueller JA, Tillisch K, Naliboff BD, Labus JS, Bushnell MC, Mayer EA (2009). Neuroanatomical correlates of placebo analgesic response. Society for Neuroscience 39th Annual Meeting, Chicago, IL.
79. **Seminowicz DA**, Bushnell MC, Rosa-Neto P, Kuchinad A, Olausson H (2009). Cerebral cortical thickness in a subject lacking large myelinated afferents. 28th Annual Scientific Meeting of the American Pain Society, San Diego, CA.
80. **Seminowicz DA**, Laferriere A, Bushnell MC (2008). Mechanical allodynia is associated with decreased anterior cingulate cortex size: MRI evidence in a rat model of neuropathic pain. Society for Neuroscience 38th Annual Meeting, Washington, DC.
81. **Seminowicz DA**, Laferriere A, Millecamps M, Yu JS, Coderre TJ, Bushnell MC (2008). Structural brain changes associated with a long-term neuropathic pain model in rats. 12th World Congress on Pain, Glasgow, Scotland.
82. Laferriere A, **Seminowicz DA**, Millecamps M, Bushnell MC (2008). Sensory and emotional changes associated with a long-term neuropathic pain model in rats. 12th World Congress on Pain, Glasgow, Scotland.
83. Schweinhardt P, **Seminowicz DA**, Jaeger E, Kuchinad A, Duncan G, Bushnell MC (2008). Placebo analgesia and personality: The ventral striatum links' dopaminergic' character traits to pain relief. 12th World Congress on Pain, Glasgow, Scotland.
84. **Seminowicz DA**, Schweinhardt P, Jaeger E, Kuchinad A, Bushnell MC (2007). Neuroanatomical correlates of placebo analgesic response. Society for Neuroscience 37th Annual Meeting, San Diego, CA.
85. Taylor KS **Seminowicz DA**, Davis KD (2007). Resting state connectivity of the insula with the cingulate cortex. 13th Annual Meeting of the Organization for Human Brain Mapping, Chicago, IL.
86. **Seminowicz DA**, Davis KD (2006). Intrinsic, anti-correlated functional brain networks are not unique to resting state and are modulated by pain. 12th Annual Meeting of the Organization for Human Brain Mapping, Florence, Italy.
87. **Seminowicz DA**, Davis KD (2005). Pain-cognition interactions depend on levels of cognitive load and pain intensity: Evidence from fMRI. 11th World Congress on Pain, Sydney, Australia.
88. **Seminowicz DA**, Davis KD (2005). Are noxious stimulus-evoked cortical responses related to pain catastrophizing in healthy individuals? 11th Annual Meeting of the Organization for Human Brain Mapping, Toronto, ON.
89. **Seminowicz DA**, Mikulis DJ, Davis KD (2003). Cortical nociceptive activity is altered during cognitive engagement. Society for Neuroscience 33rd Annual Meeting, New Orleans, LA.
90. **Seminowicz DA**, McIntosh AR, Kennedy SH, Rafi-Tari S, Mayberg HS (2002). Defining depression circuits using path analysis: A meta-analytic PET study. Society for Neuroscience 32nd Annual Meeting, Orlando, FL.
91. Keightley M, Bagby R, **Seminowicz D**, Costa P, Mayberg H (2002). The influence of neuroticism on limbic-cortical pathways mediating transient sadness. Emotions and the Brain: 12th Annual Rotman Conference, Toronto, ON.
92. Peters M, Oeltze O, **Seminowicz D**, Steinmetz H, Jancke L (2001). Heritability of overall corpus callosum (CC) midsagittal area and areas of sub-regions of the CC. Society for Neuroscience 31st Annual Meeting, San Diego, CA.
93. Meegan D, **Seminowicz D** (2001). The role of human dorsal premotor cortex in spatial cognition, attention, and oculomotor control. Conference of the Canadian Society of Brain, Behaviour, and Cognitive Science, Laval University, Québec, QC.