David A. Seminowicz, PhD
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Updated 2026-02-05

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 Associate Professor (Dean's Faculty)
2016 - 2022	Associate Professor
2010 - 2016	Assistant Professor Department of Neural and Pain Sciences School of Dentistry University of Maryland Baltimore
2022 - 2024	Honorary Principal Research Scientist
2020 - 2022	Principal Research Scientist and Associate Professor
2018 - 2019	Honorary Principal Research Scientist Neuroscience Research Australia (NeuRA)
2010 - 2024	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

2024-2029 Wolfe-Western Fellowship At-Large for outstanding newly recruited research scholars (5-year fellowship). Value $75,000 p.a.
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 $5,000 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

2025-2027 A Pain Research Suite. (PI). John R. Evans Leaders Fund (JELF). $$651,373

2025-2030 Peak Alpha Frequency and Pain Sensitivity. (PI). CIHR. $914,175

2024-2028 Unravelling the mechanistic architecture of motor behaviour in pain. (Co-PA; PA Schabrun). CIHR. $546,976

2024-2026 Development of a campus-wide interdisciplinary pain research group. Western Research Interdisciplinary Development Initiatives (IDI) Program – Stream 2. $200,000

2024-2026 Validating brain mechanisms of migraine: an EEG and fMRI study. Schulich Collaborative Research Seed Grant $48,000

2023-2028 Spatiotemporal cortical control by claustrum. NSERC Discovery Grant. $260,000

2022-2025 Startup funds. (PI) University of Western Ontario. $355,000

2020-2028 Trigeminal nociceptors: Neural intersection of chronic pain and alveolar bone remodeling. (co-I, PI M-K Chung) NIDCR, NIH, R35 $8,000,000

2019-2026 Validation of a novel cortical biomarker signature for pain. (PI; co-PI SM Schabrun) NINDS, NIH, R61/R33 R61: $1,668,993, R33: $854,352

2021-2026 Neural correlates of hypoalgesia driven by observation. (co-I; PI L Colloca) NCCIH, NIH, R01 $2,576,931

Completed

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

2019-2024 Cerebral oscillations of pain. (PI) NINDS, NIH, R01 $1,618,801

2019-2023 Separate and combined effects of mindfulness meditation and savoring on pain-related corticostriatal function. (PI; co-PI P Finan) NCCIH, NIH, R61/R33 $2,086,549

2021-2023 A digital therapeutics platform for neuromodulation of pain sensitivity. (co-I, PI Rothenberg) Maryland Innovation Initiative Award. $150,000

2016-2023 Sleep and pain in sickle cell disease. (co-I; PI Campbell) NHLBI, NIH, R01 $2,698,475

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. Phylactou P, MacRae F, Manoli A, Bouisset N, Duport A, Awan AA, Tong X, FV Ede F, **Seminowicz DA**, Schabrun SM. (2025). Transcranial magnetic stimulation induced pupil dilations can serve as a cortical excitability measure. bioRxiv. 2025.08.02.668303.
2. Stewart BW, Cormie MA, Keaser ML, Moayedi M, Mathur BN, **Seminowicz DA**. (2025). The human claustrum initiates networks for externally and internally driven task demands. bioRxiv 2025.06.26.661853.
3. Abssy SS, Osborne NR, Osokin EE, Tomin R, Honigman L, Khan JS, De Vera NW, Furman AJ, Mazaheri A, **Seminowicz DA**, Moayedi M. (2024). It's the Sound, not the Pulse: Peripheral Magnetic Stimulation Reduces Central Sensitization through Auditory Modulatory Effects. bioRxiv 2024.07.30.605813.
4. Chowdhury NS, Taseen K, Chiang A, Chang WJ, Millard SK, **Seminowicz DA**, Schabrun SM. (2024). A 5-day course of rTMS before pain onset ameliorates future pain and increases sensorimotor peak alpha frequency. bioRxiv 2024.06.11.598596.
5. Chowdhury NS, Bi C, Furman AJ, Chiang AKI, Skippen P, Si E, Millard SK, Margerison SM, Spies D, Keaser ML, Da Silva JT, Chen S, Schabrun SM, **Seminowicz DA**. (2024). A novel cortical biomarker signature accurately and reliably predicts individual pain sensitivity: The PREDICT longitudinal analytical validation study. medRxiv 2024.06.16.24309005.
6. Millard SK, Chiang AKI, Humburg P, Chowdhury N, Rehan R, Furman AJ, Mazaheri A, Schabrun SM, **Seminowicz DA**. (2023). Effects of nicotine compared to placebo gum on sensitivity to pain and mediating effects of peak alpha frequency. bioRxiv 2023.08.11.552723
7. 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

8. 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

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. Huang CHL, Stewart BL, Liu CY, Phylactou P, Mathur BN, **Seminowicz DA**. (2025). The Human Claustrum Activates Across Multiple Cognitive Control Tasks. The European journal of neuroscience, 62(9), e70318. doi.org/10.1111/ejn.70318.

2. Holzscherer EJ, Kersten R, Bertrand M, Khokhar JY, Cairns BE, Pruszynski JA, **Seminowicz DA.** (2025). Developing a model of temporomandibular disorder in the common marmoset using nerve growth factor. Journal of neurophysiology. 134(6), 1927–1938. doi.org/10.1152/jn.00459.2025

3. Cormie M A, **Seminowicz DA**, Moayedi M. (2025). The thermal grill elicits central sensitization. Pain. 166(12), 2756–2770. doi.org/10.1097/j.pain.0000000000003776

4. Storey F, Prokhorenko M, Keaser ML, Skippen P, Furman AJ, **Seminowicz DA**, Mazaheri A. (2025). Individual differences in cognitive performance under pain linked to region-specific alpha power modulations. Neurobiology of pain (Cambridge, Mass.), 18, 100196. Doi: 10.1016/j.ynpai.2025.100196.

5. Chowdhury NS, Bi C, **Seminowicz DA**. (2025). Concern About Predictive Performance of a Pain Sensitivity Biomarker—Reply. JAMA Neurol. 82(9):968–969. doi:10.1001/jamaneurol.2025.2354.

6. Wells RE, Seminowicz DA, O'Connell N, Loder EW. (2025), Disagreement with categorization of clinical trials included in Treadwell et al. systematic review and meta-analysis. Headache, 65(9):1503-1504.

7. Millard SK, Chiang AKI, Chowdhury N, Chang WJ, Furman AJ, De Martino E, Graven-Nielsen T, Schabrun SM, **Seminowicz DA**. (2025). Peak Alpha Frequency Is Not Significantly Altered by Five Days of Experimental Pain and Repetitive Transcranial Stimulation of the Left Dorsolateral Prefrontal Cortex. Eur J Neurosci. 62(4):e70219.

8. Holzscherer EJ, Zanini A, Liu CY, Everling S, **Seminowicz DA**. (2025). Resting-state functional connectivity of the marmoset claustrum. Imaging neuroscience (Cambridge, Mass.). 12; (3):1-14 IMAG.a.109.

9. Hadjis GE, Barnett A, Yu A, Lin AY, Zhou Y, Kong D, **Seminowicz DA**, McAndrews MP, Moayedi M. (2025). Salience or value: what drives priority in pain-cognition interactions? Pain. 166(12), 2851–2862. doi.org/10.1097/j.pain.0000000000003747

10. Chowdhury NS, Millard SK, de Martino E, Larsen DB, **Seminowicz DA**, Schabrun SM, de Andrade DC, Graven-Nielsen T. (2025). Posterior-superior insula repetitive transcranial magnetic stimulation reduces experimental tonic pain and pain-related cortical inhibition in humans. Pain. 166(6):1314-1327.

11. Chowdhury NS, Chang WJ, Cheng D, Manivasagan N, **Seminowicz DA**, Schabrun SM. (2025). The effect of prolonged elbow pain and rTMS on TMS-evoked potentials: A TMS-EEG study. Imaging Neuroscience 2025. (3): 1-16. doi: 10.1162/IMAG.a.7.

12. Chowdhury NS, Taseen KJ, Chiang AK, Chang WJ, Millard SK, **Seminowicz DA**, Schabrun SM. (2025). A 5-day course of repetitive transcranial magnetic stimulation before pain onset ameliorates future pain and increases sensorimotor peak alpha frequency. Pain. 166(6):1382-1394.

13. Alcon C, Margerison S, Kirse H, Zoch C, Laurienti P, **Seminowicz DA,** Wang-Price S. (2025). The Effect of Combining Transcranial Direct Current Stimulation and Pain Neuroscience Education in Patients with Chronic Low Back Pain and High Pain Catastrophizing: An Exploratory Clinical, Cognitive, and fMRI Study. Brain and Behavior. 15(5): e70543.

14. Chowdhury NS, Bi C, Furman AJ, Chiang AKI, Skippen P, Si E, Millard SK, Margerison SM, Spies D, Keaser ML, Da Silva JT, Chen S, Schabrun SM, **Seminowicz DA.** (2025). Predicting Individual Pain Sensitivity Using a Novel Cortical Biomarker Signature. JAMA Neurol. 1;82(3):237-246.

15. Schramm S, Börner-Schröder C, Reichert M, Ramschütz C, Androulakis XM, Ashina M, Coppola G, Cucchiara B, Dong Z, Du X, Fischer-Schulte LH, Goadsby PJ, Christensen RH, Henderson LA, Hougaard A, Liu JR, Juhasz G, Karsan N, Kong J, Lee J, Lee MJ, Linnman C, Mathur V, May A, Mehnert J, Moulton E, Niddam DM, Schoenen J, **Seminowicz DA**, Stankewitz A, Tu Y, Veréb D, Yin T, Zimmer C, Heinen F, Baum T, Bonfert MV, Sollmann N. (2025). Consensus Recommendations to Establish Reporting Standards in fMRI of Migraine: A Delphi Study. Neurology. 104(5): e210235.

16. Quidé Y et al. (2024). ENIGMA-Chronic Pain: a worldwide initiative to identify brain correlates of chronic pain. Pain. 165(12):2662-2666.

17. Phylactou P, Pham TNM, Narskhani N, Diya N, **Seminowicz DA,** Schabrun SM. (2024). Phosphene and motor transcranial magnetic stimulation thresholds are correlated: A meta-analytic investigation. Prog Neuropsychopharmacol Biol Psychiatry. 13:133:111020.

18. Millard SK, Speis DB, Skippen P, Chiang AKI, Chang WJ, Lin AJ, Furman AJ, Mazaheri A, **Seminowicz DA,** Schabrun SM. (2024). Can non-invasive brain stimulation modulate peak alpha frequency in the human brain? A systematic review and meta-analysis. The European Journal of Neuroscience. 60(3):4182-4200.

19. Stewart BW, Keaser ML, Lee H, Margerison SM, Cormie MA, Moayedi M, Lindquist MA, Chen S, Mathur BN, **Seminowicz DA.** (2024). Pathological claustrum activity drives aberrant cognitive network processing in human chronic pain. Current Biology. 6;34(9):1953-1966.e6.

20. Meeker TJ, Kim HJ, Tulloch IK, Keaser ML, **Seminowicz DA**, Dorsey SG. (2024). Secondary analysis: Heat and self-report pain sensitivity associate with biological sex and racialized sociocultural group but may not be mediated by anxiety or pain catastrophizing. Pain Reports. 9(1): e1133.

21. Finan PH, Hunt C, Keaser ML, Smith K, Lerman S, Bingham CO, Barrett F, Garland EL, Zeidan F, **Seminowicz DA**. (2024).Effects of savoring meditation on positive emotions and pain-related brain function: A mechanistic randomized controlled trial in people with rheumatoid arthritis. The Journal of Pain. 25(7):104478.

22. Hunt CA, Letzen JE, Krimmel SR, Burrowes SAB, Haythornthwaite JA, Keaser M, Reid M, Finan PH, **Seminowicz DA.** (2023). Meditation practice, mindfulness, and pain-related outcomes in mindfulness-based treatment for episodic migraine. Mindfulness (NY). 14(4):769-783.

23. Schabrun SM, Si E, Millard SK, Chiang AKI, Chen S, Chowdhury NS, **Seminowicz DA**. (2023). Intramuscular injection of nerve growth factor as a model of temporomandibular disorder: Nature, time-course, and sex differences characterizing the pain experience. Neurobiology of Pain. 13:100117.

24. Mazaheri A, Furman AJ, **Seminowicz DA**. (2023). Fear and pain slow the brain. Pain. Online ahead of print.

25. Chowdhury NS, Chiang AKI, Millard SK, Skippen P, Chang WJ, **Seminowicz DA**, Schabrun SM. (2023). Combined transcranial magnetic stimulation and electroencephalography reveals alterations in cortical excitability during pain. Elife 12:RP88567.

26. Da Silva JT, Hernandez-Rojas LG, Mekonen HK, Hanson S, Melemedjian O, Scott AJ, Ernst RK, **Seminowicz DA**, Traub RJ. (2023). Sex differences in visceral sensitivity and brain activity in a rat model of comorbid pain: A longitudinal study. Pain. 165(3):698-706.

27. Goyal M, Haythornthwaite JA, Jain S, Peterlin BL, Mehrotra M, Levine D, Rosenberg JD, Minges M, **Seminowicz DA**, Ford DE. (2023). Intensive mindfulness meditation reduces frequency and burden of migraine: An unblinded single-arm trial. Mindfulness. 14(2):406-417.

28. Mathur VA, Payano Sosa JS, Keaser ML, Meiller TF, **Seminowicz DA**. (2023). The social context of burning mouth

syndrome: An exploratory pilot study of stigma, discrimination, and pain. Pain Medicine. 24(11):1213-1218.

29. Chowdhury NS, Skippen P, Si E, Chiang A, Millard SK, Furman AJ, Chen S, **Seminowicz DA**, Schabrun SM. (2023). The reliability of two prospective cortical biomarkers for pain: EEG peak alpha frequency and TMS corticomotor excitability. Journal of Neuroscience Methods. 385:109766.

30. Qadir H, Stewart BW, Van Ryzin JW, Wu Q, Chen S, **Seminowicz DA**, Mathur BN. (2022). The mouse claustrum synaptically connects cortical network motifs. Cell Reports. 41(12):111860.

31. Madden MB, Steward BW, White MG, Krimmel SR, Qadir H, Barret FS, **Seminowicz DA**, Mathur B. (2022). A role for the claustrum in cognitive control. Trends in Cognitive Sciences. 26(12):1133-1152.

32. Margerison SM, Westlake KP, **Seminowicz DA**. (2022). Beyond pain in the brain: A clinician's guide to interpreting the spinal cord's role in the pain experience. Musculoskeletal Science & Practice. 62:102664.

33. Mazaheri A, **Seminowicz DA**, Furman AJ. (2022). Peak alpha frequency as a candidate biomarker of pain sensitivity: The importance of distinguishing slow from slowing. Neuroimage. 262:119560.

34. Hunt CA, Letzen JE, Krimmel SR, Burrowes SAB, Haythornthwaite JA, Finan PH, 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. The Journal of Pain. 23(12):2110-2120.

35. 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. 42(31):6156-6166.

36. 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.

37. 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. 23(10):1680-1696.

38. 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.

39. 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.

40. 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. 23(8):1389-1399.

41. 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. 163(9):e1030-e1037.

42. 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.

43. 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.

44. Burrowes SAB, Goloubeva 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.

45. 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 sensibility, anxiety and somatization. European Journal of Pain. 25(9):1971-1993.

46. Oswald LM, Dunn KE, **Seminowicz DA**, Storr CL. (2021). Early life stress and risks for opioid misuse: Review of data supporting neurobiological underpinnings. Journal 0f Personalized Medicine. 11(4):315.

47. 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.

48. **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.

49. 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.

50. 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.

51. **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.

52. 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.

53. 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.

54. 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.

55. Da Silva JT, **Seminowicz DA**. (2019). Neuroimaging of pain in animal models: A review of recent literature. Pain Reports. 4(4):e732.

56. 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.

57. 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.

58. 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.

59. **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.

60. Meeker 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.

61. 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.

62. Burrowes SAB, Rhodes CS, Meeker 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.

63. 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.

64. 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.

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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

2025.06.05 Keynote: Cortical Biomarkers of Pain Sensitivity: Toward Validation and Clinical Application. Michael G. DeGroote Pain Symposium, McMaster University, Hamilton, Ontario.

2025.06.05 Keynote: Neuroimaging of acute and chronic pain: biomarkers and mechanisms. London Imaging Discovery Day, King's College, London, Ontario.

2025.05.15 Predicting individual pain sensitivity using a novel cortical biomarker signature. NIH Acute to Chronic Pain Consortium. Webinar.

2025.05.03 The role of the claustrum and cognitive network activity in acute and chronic pain. Canadian Pain Society Annual Meeting, Toronto, Ontario, Canada.

2025.03.26 Experimental pain models. Music for Pain Consortium. Webinar.

2024.11.26 TMS in acute and chronic pain. TMS: Journey from Past & Present to Future Vistas and Beyond. Online. Psychiatric Academic Clinical Education Rounds Series, Western University, London, Ontario.

2024.11.12 Mindfulness. Unlocking migraine relief: Non-pharmacological options. Webinar, Elsevier press. https://webinars.elsevier.com/elsevier/Unlocking-migraine-relief-Non-pharmacological-options

2024.11.06 Neuroimaging the cognitive and emotional dimensions of acute and chronic pain: toward biomarkers and treatments. Western kNOw-PAIN meet the team series, Western University, London, Ontario.

2024.11.01 Neuroimaging the cognitive and emotional dimensions of acute and chronic pain: toward biomarkers and treatments. Department of Anatomy and Cell Biology Speaker Series, Western University.

2024.09.25 Neuroimaging the cognitive and emotional dimensions of acute and chronic pain: toward biomarkers and treatment, London, Ontario.

2024.08.07 Is there an fMRI signature explaining why some people might benefit from mind-body therapies? International Association for the Study of Pain World Congress on Pain. Amsterdam, The Netherlands.

2024.05.04 Discovering cognitive mechanisms of acute and chronic pain using EEG, fMRI, and simultaneous EEG-fMRI. Translational Neuroscience Group. Western University, London, Canada.

2024.04.30 A novel brain mapping based biomarker of orofacial pain severity. Canadian Pain Society Annual Meeting, Ottawa, Ontario, Canada.

2024.04.19 Brain-based biomarkers for chronic pain. International Neuroethics Society Meeting. Baltimore, Maryland.

2024.04.05 A Novel Cortical Biomarker Signature for Predicting Pain Sensitivity. University of Southern California.

2024.03.18 Acute pain mechanisms assessed with simultaneous EEG-fMRI (and a claustrum story). Human Pain Seminar Series Annual Meeting. Toronto, Canada.

2024.01.29 How the claustrum instantiates cognitive network activity in acute and chronic pain. Winter Conference on Brain Research. Breckenridge, Colorado.

2023.12.18 EEG and fMRI biomarkers of chronic pain. Neurology and Neurosurgery Grand Rounds, Western University, London, Canada.

2023.11.27 Peak alpha frequency in the pain field: From the lab to bedside. Translational Neurobiology of the Pain System XXVIII. Aalborg University, Denmark.

2023.10.06 A novel cortical biomarker signature for predicting pain sensitivity. Blaustein Pain Conference, Johns Hopkins Neurology and Neurosurgery, Baltimore, MD

2023.06.16 fMRI and EEG studies of acute and chronic pain. Western Pain Research Showcase. Western University, Canada.

2023.03.21 A bit about brain biomarkers for pain. Human Pain Seminar Series Annual Meeting. Toronto, Canada.

2023.03.17 Plenary: Brain mechanisms of mindfulness interventions for chronic pain. Annual Danish IASP Chapter Meeting. Aalborg, Denmark. (Delivered Virtually).

2022.09.21 Peak alpha frequency is a simple and reliable metric of pain sensitivity. International Association for the Study of Pain World Congress on Pain. Toronto, Canada.

2022.09.19 A novel cortical biomarker signature for predicting pain sensitivity. International Association for the Study of Pain World Congress on Pain. Toronto, Canada.

2022.05.11 Multimodal examination of prolonged pain. Canadian Pain Society Annual Meeting, Montreal, Quebec, Canada.

2022.04.26 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, USA

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-subcoritcal 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

Undergraduate

Biophys 9663	instructor
Biophys 9650	instructor
MedBio 4700	instructor
MedSci 4990E: Neuroimaging Module	instructor
Neuroscience 4000	mentor

Graduate

GPILS 618 Neurovascular coupling and the HRF	instructor
GPILS 618 Functional brain networks	instructor
GPILS 618 Pain neuroimaging	instructor
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 SERVICE

University of Western Ontario

2025- 2026	The MedBio Appointments Committee
2023-	Graduate Executive Committee, Medical Biophysics
2023-	Center for Functional and Metabolic Mapping Committee
2022-	kNOw-PAIN interdisciplinary research group (founder, co-director)
2022-	Robarts: Imaging Group
2022-	Translational Neuroscience Group
2022-	Western Institute for Neuroscience (member)
2022-	Western Bone and Joint Institute (member)

University of Maryland

2016-2022	Center to Advance Chronic Pain Research, Executive Committee
2016-2018	Maryland Exercise and Robotics Center of Excellence (MERCE), Internal Advisory Committee
2012-2015	Annual Maryland Neuroimaging Retreat co-organizer
2012-2015	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

2023-2025	Yuan Yao thesis committee (MSc mentor): The midcingulate cortex in pain, cognition, and emotion
2022-2025	Chloe Cheung thesis committee (MSc mentor): Neuroimaging studies of pain and cognition
2022-2025	Somayeh Mashatan thesis committee (MSc mentor): Decoding pain perception using EEG and simultaneous EEG-fMRI
2025-	Christi Tam (MSc mentor): precision mapping-based targeting of the DLPFC for pain and cognition
2025-	Dryden Arseneau (MSc mentor): EEG alpha oscillations related to individual differences in pain perception
2025-	Delia Cana (MSc mentor): Brain Oscillations and Pain Using EEG-fMRI
2025-	Eva Lian (MSc mentor): Investigating the role of posterior-inferior Dorsolateral Prefrontal Cortex in pain and cognition
2021-2024	Brent Stewart thesis committee chair (PhD mentor): Neuroimaging studies of pain, cognition, and the role of the claustrum
2020-2025	Sarah Margerison thesis committee chair (PhD mentor): The interaction of cingulate cortex activity, pain catastrophizing, and cognitive performance while experiencing pain
2020-2025	Maxwell Madden thesis committee
2020-2023	Samantha Millard thesis committee (PhD co-mentor) (Neuroscience Research Australia): Modulating pain sensitivity in humans
2019-2023	Katarzyna Bilska thesis committee (PhD co-mentor) (Neuroscience Research Australia): Biomarkers for pain
2017-2021	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
2025- Joshua Hoddinott (post-doctoral mentor): Causal relationships of alpha oscillations and pain
2024- Merna Seliman (post-doctoral mentor): Validating brain biomarkers in migraine
2024- Ashley Lowndes (post-doctoral co-mentor): Initial clinical validation of a brain-based biomarker of transition from acute to chronic pain
2024- Arnaud Duport (post-doctoral co-mentor): Motor adaptations to pain
2023- Chun Yin Liu (post-doctoral mentor): The claustrum in pain and cognitive control
2023-2025 Phivos Phylactou (Post-doctoral co-mentor): Working memory and pain
2021-2022 Andrew Furman (Post-doctoral mentor): Peak alpha frequency and pain
2021-2022 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
2019-2024 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

Graduate Supervision
2023-2024 Celine Huang (BSc thesis mentor): The claustrum in multiple cognitive domains
2023-2024 Grace Vo (BSc project mentor): Offset analgesia in migraine

Advisory/Thesis/Defense
2025 Rasa Eskandari, PhD proposal examination
2025 Michael Karkuszewski, MSc thesis examination
2025 Alina Kuimova, MSc thesis examination
2025 Farah Mushtaha, MSc thesis examination
2025 Kevin Moore, Medical Biophysics mid-level exam chair
2024 Sam Laxer, Medical Biophysics mid-level exam chair
2024 Hassan Al-Hayawi, MSc thesis examination
2024 Iman Aziz, MSc thesis examination
2024 Edith Otalike, PhD proposal examination
2024 Zachary Koudys, PhD proposal chair
2023 Praveen Dassanayake, MSc thesis examination
2023 Rachel Sargeson, MSc thesis examination chair
2023 Jessica Archibald, external PhD thesis examination (UBC)
2022 Brett Liem, MSc thesis examination
2022 Geoffy Ngo, PhD thesis examination

2022- Emma Tassinary, MSc thesis committee
2021-2023 Evgeny Osokin, MSc thesis committee (University of Toronto)
2021 Nesreen Alissa, comprehensive exam committee
2021-2023 Rachel Cundiff O'Sullivan, thesis committee
2020- Maxwell Madden, thesis committee
2019-2023 Lizbeth Ayoub, thesis committee (University of Toronto)
2019-2023 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
2020-2022 Centre for Pain IMPACT, co-Director
2021-2022 Seminar committee (member, seminar chair)
2020-2022 Research committee (member)

Society/Organization
2021-2024 International Association for the Study of Pain: Neuroimaging of Pain Special Interest Group (SIG) (co-chair)
2014-2024 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
2024- Section Editor: *Neurobiology of Pain*
2023- Associate Editor: *Somatosensory and Motor Research*
2023- Associate Editor: *Pain*
2017-2023 Section Editor: *Pain*, Pain Measurement and Imaging section

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

International Collaboration Activities
2014 – 2030 Principal Investigator, Canada
I have ongoing collaborations with researchers at the University of Toronto on pain cognition interactions.
2014 – 2027 Principal Investigator, United Kingdom
I have ongoing collaborations with multiple investigators at the University of Birmingham on studies of EEG and simultaneous EEG-fMRI.
2017 – 2028 Principal Investigator, Australia
I have past collaborations with University of Wester Sydney and University of New South Wales (Neuroscience Research Australia) on pain biomarkers and TMS/EEG, and ongoing collaborations with University of Queensland on mindfulness for pain.
2010 – 2028 Principal Investigator, United States of America
I have a number of collaborations with researchers at Johns Hopkins University, University

of Maryland (multiple campuses), University of Virginia, University of Washington, and past collaborations with University of Vermont, University of Utah, University of California San Diego, Dartmouth University. The topics included in these collaborations primarily include pain and cognition neuroimaging.

2016 – 2019 Principal Investigator, Denmark
I have a collaboration with Aalborg University on various topics related to pain. I co-mentored a PhD student who spent a year in my lab in Baltimore.

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, biomarkers

Interests

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

PROFESSIONAL AFFILIATIONS

- International Association for the Study of Pain: member
- Organization for Human Brain Mapping: member
- Society for Neuroscience: member
- University of Maryland Center to Advance Chronic Pain Research (UM CACPR): past executive committee
- University of Maryland Center for Pain Studies: past faculty
- US Association for the Study of Pain: past member
- American Pain Society: past member
- Society for Claustrum Research: past 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,
2014	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

2025-09	Canadian Institutes of Health Research (CIHR), Behavioural Sciences – B: Clinical Behavioural Sciences (BSB) Project Grant: Fall 2025 competition
2025-08	Member of the Canadian Institutes of Health Research (CIHR) College of reviewers
2025-01	Canadian Institutes of Health Research (CIHR), Behavioural Sciences – B: Clinical Behavioural Sciences (BSB) Project Grant: Fall 2024 competition
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

2025	Compositions and Methods for Targeting Chronic Pain by Targeting Cortical Lipid Metabolism. UMB Docket Number: RT-2025-060 (PR). Filing date: 23.04.2025. Inventors: Richard J. Traub, Robert K. Ernst, Joyce Teixeira da Silva, David A. Seminowicz, Alison J. Scott.

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

Cheung, CL., **Seminowicz, DA.** (2025). Mindfulness. In Migraine Pain Management Current pharmacological and non-pharmacological options. Shrewsbury, S.B. (Ed), (pp 571-587). Academic Press.

Seminowicz, DA., 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, DA.**, 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, DA.,** 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, Moayedi 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. Moayedi 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. Moayedi 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. Meeker 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. Meeker 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). Thalmocortical 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, Moayedi 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.