



Phone: +61 422 567 299

Date of Birth: 5 November 1997

Address: 94 Mallett Street, Camperdown, NSW, 2050

Email: lewis.crawford@sydney.edu.au

Research Output: career citations: 137 | h-index: 7

Passionate postdoctoral researcher with five years of experience in the field of human brain imaging and pain neuroscience. Author of 12 published manuscripts (5 first author) extending experimental and clinically focused designs. Experience with supervising students and teaching within the University of Sydney school of medicine and health. Active contributor at both national and international conferences - presenting posters, research updates, and topical sessions.

Education:

2016 – 2018 Bachelor of Science, The University of Sydney.

2019 – 2020 First Class Honours, Bachelor of Science, The University of Sydney.

2020 - 2023 Doctor of Philosophy, The University of Sydney.

Publications:

- **Crawford LS**, Mills EP, Hanson T, Macey PM, Glarin R, Macefield VG, et al. Brainstem Mechanisms of Pain Modulation: A within-Subjects 7T fMRI Study of Placebo Analgesic and Nocebo Hyperalgesic Responses. *The Journal of Neuroscience*. 2021;41(47):9794-806.
- Doyen S, Taylor H, Nicholas P, **Crawford L**, Young I, Sughrue ME. Hollow-tree super: A directional and scalable approach for feature importance in boosted tree models. *PLOS ONE*. 2021;16(10):e0258658.
- **Crawford LS**, Boorman DC, Keay KA, Henderson LA. The pain conductor: brainstem modulation in acute and chronic pain. *Curr Opin Support Palliat Care*. 2022;16(2):71-7.
- Doyen S, Nicholas P, Poologaindran A, **Crawford L**, Young IM, Romero-Garcia R, et al. Connectivity-based parcellation of normal and anatomically distorted human cerebral cortex. *Human Brain Mapping*. 2022;43(4):1358-69.
- Robertson RV, **Crawford LS**, Meylakh N, Macey PM, Macefield VG, Keay KA, et al. Regional hypothalamic, amygdala, and midbrain periaqueductal gray matter recruitment during acute pain in awake humans: A 7-Tesla functional magnetic resonance imaging study. *NeuroImage*. 2022;259:119408.
- Tinoco Mendoza FA, Hughes TES, Robertson RV, **Crawford LS**, Meylakh N, Macey PM, et al. Detailed organisation of the human midbrain periaqueductal grey revealed using ultra-high field magnetic resonance imaging. *NeuroImage*. 2023;266:119828.
- **Crawford LS**, Meylakh N, Macey PM, Macefield VG, Keay KA, Henderson LA. Stimulus-independent and stimulus-dependent neural networks underpin placebo analgesia responsiveness in humans. *Communications Biology*. 2023;6(1):569.
- Young IM, Dadario NB, Tanglay O, Chen E, Cook B, Taylor HM, et al. Connectivity model of the anatomic substrates and network abnormalities in major depressive disorder: A coordinate meta-analysis of resting-state functional connectivity. *Journal of Affective Disorders Reports*. 2023;11:100478.
- **Crawford L**, Mills E, Meylakh N, Macey PM, Macefield VG, Henderson LA. Brain activity changes associated with pain perception variability. *Cereb Cortex*. 2023;33(7):4145-55.
- **Crawford LS**, Mills EP, Peek A, Macefield VG, Keay KA, Henderson LA. Function and biochemistry of the dorsolateral prefrontal cortex during placebo analgesia: how the certainty of prior experiences shapes endogenous pain relief. *Cereb Cortex*. 2023;33(17):9822.
- Yueh-Hsin L, Dadario NB, Tang SJ, **Crawford L**, Tanglay O, Dow H-K, et al. Discernible interindividual patterns of global efficiency decline during theoretical brain surgery. *Scientific Reports*. 2024;14(1):14573.
- Meylakh N, **Crawford LS**, Mills EP, Macefield VG, Vickers ER, Macey PM, et al. Altered cortico-brainstem connectivity during spontaneous fluctuations in pain intensity in painful trigeminal neuropathy. *eneuro*. 2024:ENEURO.0522-23.2024.

Invited Presentations:

- Australian Pain Society 2022 annual meeting – topical session (2022)
- Ben Colagiuri School of Psychology laboratory journal club (2022)
- Melbourne Brain Centre Imaging Unit seminar series (2022)
- Massih Moayedipain laboratory journal club (2022)
- James Mac Shine neuroimaging laboratory journal club (2022)
- University of Sydney ECMR SIG presentation (2021)

Academic Submissions

- Australian Pain Society 40th ASM, **poster abstract** (2020)
- PAIN 2020 conference, **poster abstract** (2020)
- Australian Pain Society 41st ASM, **poster abstract** (2021)
- Brain and Mind Centre Neuroscience colloquium, **presentation** (2021)
- Australian Pain Society 42nd ASM, **free paper + topical session** (2022)
- International Association for the Study of Pain, **poster abstract** (2022)
- Australian Pain Society 43rd ASM, **poster abstract** (2023)
- Australian Pain Society 44th ASM, **free paper presentation** (2024)
- Pain mechanisms and therapeutics | Verona, **data blitz** (2024)

Key Achievements

- **Science extension mentorship program** Sydney University (2019-2020).
- **Academic mentor** for St Pauls College students enrolled in the faculty of Science, Sydney University (2018).
- **Manuscript Commentary** provided by [Science Magazine](#), [Nature Neuroscience](#), [Journal of Neuroscience Journal Club](#).

Recent Experiences

2023 - Current	Postdoctoral Research Associate. Supervision of HDR research students at the University of Sydney faculty of medicine and health and group leader of Professor Luke Henderson's Neural Imaging Laboratory.
2020 - 2022	Omniscient Neurotechnology Academic Content Co-ordinator. Organize and write scientific articles and blog entries for publishing in the topic areas of brain mapping and neurosurgical guidance.
2017 - 2018	Sydney University Sports and Fitness (SUSF) board student member. Assist in the resource management and budget allocation for SUSF club members and sport teams.
2016 - 2018	Engagement with community outreach programs at St Pauls College, Sydney University, including organising charity sporting events in support of the mental health awareness charity, Batyr.

Professional Memberships:

- International Association for the Study of Pain (IASP)
- Australian Pain Society (APS)