

Christine Law

Physical Science Research Scientist, Anesthesia - Adult Pain Medicine

Publications

PUBLICATIONS

- **Differential encoding of noxious heat and self-reported pain along corticospinal networks: a simultaneous spinal cord-brain fMRI study.** *bioRxiv : the preprint server for biology*
Pfyffer, D., Wang, Y., Kaptan, M., Fundaun, J., Dildine, T. C., Oliva, V., Indriolo, T., Skare, S., Sprenger, T., Lee, P. K., Truong, M., Weber, K. A., Glover, et al
2025
- **Mapping hand function with simultaneous brain-spinal cord functional MRI.** *Imaging neuroscience (Cambridge, Mass.)*
Oliva, V., Bédard, S., Kaptan, M., Pfyffer, D., Chy, B., Aufrechtig, S., Berhe, N., Chaudhari, A. S., Tharin, S., Hu, S. S., Ratliff, J., Smith, Z. A., Smith, et al
2025; 3
- **EPISeg: Automated segmentation of the spinal cord on echo planar images using open-access multi-center data.** *Imaging neuroscience (Cambridge, Mass.)*
Banerjee, R., Kaptan, M., Tinnermann, A., Khatibi, A., Dabbagh, A., Büchel, C., Kündig, C. W., Law, C. S., Pfyffer, D., Lythgoe, D. J., Tsivaka, D., Van De Ville, D., Eippert, et al
2025; 3
- **Body size and intracranial volume interact with the structure of the central nervous system: A multi-center in vivo neuroimaging study** *IMAGING NEUROSCIENCE*
Labounek, R., Bondy, M. T., Paulson, A. L., Bedard, S., Abramovic, M., Alonso-Ortiz, E., Atcheson, N. T., Barlow, L. R., Barry, R. L., Barth, M., Battiston, M., Buechel, C., Budde, et al
2025; 3
- **Body size and intracranial volume interact with the structure of the central nervous system: A multi-center in vivo neuroimaging study.** *Imaging neuroscience (Cambridge, Mass.)*
Labounek, R., Bondy, M. T., Paulson, A. L., Bédard, S., Abramovic, M., Alonso-Ortiz, E., Atcheson, N. T., Barlow, L. R., Barry, R. L., Barth, M., Battiston, M., Büchel, C., Budde, et al
2025; 3
- **Assessing Functional Connectivity Between Brain and Spinal Cord During Thermal Pain**
Kaptan, M., Pfyffer, D., Law, C. S. W., Weber, K. A., Glover, G., Mackey, S.
CHURCHILL LIVINGSTONE.2025: 110
- **Brain and Spinal Cord Correlates of Deficient Endogenous Pain Modulation in Fibromyalgia Identified by Corticospinal Functional Magnetic Resonance Imaging**
Pfyffer, D., Kaptan, M., Law, C. S. W., Weber II, K. A., Oliva, V., Bedard, S., Indriolo, T., Maronesy, T., Glover, G. H., Mackey, S.
CHURCHILL LIVINGSTONE.2025
- **EPISeg: Automated segmentation of the spinal cord on echo planar images using open-access multi-center data.** *bioRxiv : the preprint server for biology*
Banerjee, R., Kaptan, M., Tinnermann, A., Khatibi, A., Dabbagh, A., Kündig, C. W., Law, C. S., Pfyffer, D., Lythgoe, D. J., Tsivaka, D., Ville, D. V., Eippert, F., Muhammad, et al
2025
- **Body size interacts with the structure of the central nervous system: A multi-center in vivo neuroimaging study.** *bioRxiv : the preprint server for biology*

Labounek, R., Bondy, M. T., Paulson, A. L., Bédard, S., Abramovic, M., Alonso-Ortiz, E., Atcheson, N. T., Barlow, L. R., Barry, R. L., Barth, M., Battiston, M., Büchel, C., Budde, et al
2024

- **Exploring Neuronal Underpinnings of Emotional Regulation of Pain in Fibromyalgia Patients**
Kaptan, M., Pfyffer, D., Law, C. S. W., Oliva, V., Weber, K., Glover, G., Mackey, S.
CHURCHILL LIVINGSTONE.2024: 47
- **Imaging Corticospinal Correlates of Aberrant Pain Processing and Modulation in Fibromyalgia Using Combined Brain-Spinal Cord Functional Magnetic Resonance Imaging**
Pfyffer, D., Kaptan, M., Law, C. S. W., Weber, K. A., Oliva, V., Bedard, S., Maronesy, T., Glover, G. H., Mackey, S.
CHURCHILL LIVINGSTONE.2024: 47-48
- **Investigating the Associations between Lumbar Paraspinal Muscle Health and Age, BMI, Sex, Physical Activity and Back Pain using an Automated Computer-Vision Model: A UK Biobank Study.** *The spine journal : official journal of the North American Spine Society*
Wesselink, E. O., Pool-Goudzwaard, A., De Leener, B., Law, C., Fenyo, M. B., Ello, G. M., Coppieters, M. W., Elliott, J. M., Mackey, S., Weber, K. A.
2024
- **Recent developments and future avenues for human corticospinal neuroimaging.** *Frontiers in human neuroscience*
Kaptan, M., Pfyffer, D., Konstantopoulos, C. G., Law, C. S., Weber, K. A., Glover, G. H., Mackey, S.
2024; 18: 1339881
- **AMMA: Adaptive Multimodal Assistants Through Automated State Tracking and User Model-Directed Guidance Planning**
Yang, J., Qiu, L., Corona-Moreno, E., Shi, L., Bui, H., Lam, M. S., Landay, J. A., IEEE Comp Soc
IEEE COMPUTER SOC.2024: 892-902
- **Exploring Corticospinal Functional Connectome Using Resting-State Functional Magnetic Resonance Imaging**
Kaptan, M., Law, C. S. W., Weber, K., Pfyffer, D., Zhang, X., Maronesy, T., Glover, G., Mackey, S.
CHURCHILL LIVINGSTONE.2023: 17-18
- **Imaging Noxious Thermal Intensity Encoding Along The Neuraxis Using Simultaneous Spinal Cord-Brain Functional Magnetic Resonance Imaging**
Pfyffer, D., Law, C. S. W., Weber, K. A., Kaptan, M., Maronesy, T., Glover, G. H., Mackey, S.
CHURCHILL LIVINGSTONE.2023: 76
- **Self-reported physical function is strongly related to pain behavior and pain interference and weakly related to physical capacity in people with chronic low back pain.** *Musculoskeletal science & practice*
Karayannis, N. V., Smuck, M., Law, C., Mackey, S. C., Gross, J. J., Darnall, B. D., Hush, J.
2023: 102721
- **Confounds in neuroimaging: A clear case of sex as a confound in brain-based prediction.** *Frontiers in neurology*
Weber, K. A., Teplin, Z. M., Wager, T. D., Law, C. S., Prabhakar, N. K., Ashar, Y. K., Gilam, G., Banerjee, S., Delp, S. L., Glover, G. H., Hastie, T. J., Mackey, S.
2022; 13: 960760
- **Mindfulness-Based Stress Reduction, Cognitive Behavioral Therapy, and Acupuncture in Chronic Low Back Pain: Protocol for Two Linked Randomized Controlled Trials.** *JMIR research protocols*
Mackey, S., Gilam, G., Darnall, B., Goldin, P., Kong, J., Law, C., Heirich, M., Karayannis, N., Kao, M., Tian, L., Manber, R., Gross, J.
2022; 11 (9): e37823
- **Response to Scholkman Commentary: "Effect of Wearing a Face Mask on fMRI BOLD Contrast".** *NeuroImage*
Law, C. S., Lan, P. S., Glover, G. H.
2021: 118773
- **Prediction of Cognitive Function with Multimodal Brain MRI**
Weber, K., Wager, T. D., Rosen, A., Ashar, Y. K., Law, C. S., Gilam, G., Upadhyayula, P. A., Zhu, S., Banerjee, S., Glover, G. H., Hastie, T. J., Mackey, S.
WILEY.2021: S42
- **Author Correction: Open-access quantitative MRI data of the spinal cord and reproducibility across participants, sites and manufacturers.** *Scientific data*

- Cohen-Adad, J., Alonso-Ortiz, E., Abramovic, M., Arneitz, C., Atcheson, N., Barlow, L., Barry, R. L., Barth, M., Battiston, M., Buchel, C., Budde, M., Callot, V., Combes, et al
2021; 8 (1): 242
- **THE TEMPORAL RELATIONSHIP BETWEEN NEGATIVE AFFECT AND SLEEP BRUXISM IN PATIENTS WITH CHRONIC BACK PAIN**
Hettie, G., You, D. S., Ziadni, M., Kong, J., Law, C., Gross, J., Manber, R., Darnall, B. D., Mackey, S.
OXFORD UNIV PRESS INC.2021: S478
 - **Effect of Wearing a Face Mask on fMRI BOLD Contrast.** *NeuroImage*
Law, C. S., Lan, P. S., Glover, G. H.
2021: 117752
 - **Association between temporal summation and conditioned pain modulation in chronic low back pain: baseline results from 2 clinical trials.** *Pain reports*
Kong, J. T., You, D. S., Law, C. S., Darnall, B. D., Gross, J. J., Manber, R., Mackey, S.
2021; 6 (4): e975
 - **Quantification of cerebral blood volume changes caused by visual stimulation at 3 T using DANTE-prepared dual-echo EPI.** *Magnetic resonance in medicine*
Li, L., Law, C., Marrett, S., Chai, Y., Huber, L., Jezzard, P., Bandettini, P.
2021
 - **Generic acquisition protocol for quantitative MRI of the spinal cord.** *Nature protocols*
Cohen-Adad, J., Alonso-Ortiz, E., Abramovic, M., Arneitz, C., Atcheson, N., Barlow, L., Barry, R. L., Barth, M., Battiston, M., Büchel, C., Budde, M., Callot, V., Combes, et al
2021
 - **Open-access quantitative MRI data of the spinal cord and reproducibility across participants, sites and manufacturers.** *Scientific data*
Cohen-Adad, J., Alonso-Ortiz, E., Abramovic, M., Arneitz, C., Atcheson, N., Barlow, L., Barry, R. L., Barth, M., Battiston, M., Büchel, C., Budde, M., Callot, V., Combes, et al
2021; 8 (1): 219
 - **Author Correction: Open-access quantitative MRI data of the spinal cord and reproducibility across participants, sites and manufacturers.** *Scientific data*
Cohen-Adad, J., Alonso-Ortiz, E., Abramovic, M., Arneitz, C., Atcheson, N., Barlow, L., Barry, R. L., Barth, M., Battiston, M., Büchel, C., Budde, M., Callot, V., Combes, et al
2021; 8 (1): 251
 - **Brain Strength: Multi-Modal Brain MRI Predicts Grip Strength**
Weber, K. A., Wager, T. D., Upadhyayula, P. A., Law, C. S., Ashar, Y. K., Prabhakar, N. K., Zhu, S., Gilam, G., Banerjee, S., Delp, S. L., Glover, G. H., Hastie, T. J., Mackey, et al
WILEY.2020: S223–S224
 - **Assessing the Spatial Distribution of Cervical Spinal Cord Activity during Tactile Stimulation of the Upper Extremity in Humans with Functional Magnetic Resonance Imaging.** *NeuroImage*
Weber, K. A., Chen, Y., Paliwal, M., Law, C. S., Hopkins, B. S., Mackey, S., Dhaheer, Y., Parrish, T. B., Smith, Z. A.
2020: 116905
 - **Resting State Functional Connectivity Machine Learning Classification of Chronic Back Pain**
Weber, K. A., Law, C. S., Asher, Y. K., Martucci, K. T., Gilam, G., Lewis, B., Narayan, S., Hastie, T., Wager, T. D., Mackey, S.
WILEY.2019: S266
 - **Dynamic per slice shimming for simultaneous brain and spinal cord fMRI** *MAGNETIC RESONANCE IN MEDICINE*
Islam, H., Law, C. S. W., Weber, K. A., Mackey, S. C., Glover, G. H.
2019; 81 (2): 825–38
 - **Central mechanisms of real and sham electroacupuncture in the treatment of chronic low back pain: study protocol for a randomized, placebo-controlled clinical trial.** *Trials*
Kong, J., Maclsaac, B., Cogan, R., Ng, A., Law, C. S., Helms, J., Schnyer, R., Karayannis, N. V., Kao, M., Tian, L., Darnall, B. D., Gross, J. J., Mackey, et al
2018; 19 (1): 685

- **Central mechanisms of real and sham electroacupuncture in the treatment of chronic low back pain: study protocol for a randomized, placebo-controlled clinical trial** *TRIALS*
Kong, J., MacIsaac, B., Cogan, R., Ng, A., Law, C., Helms, J., Schnyer, R., Karayannis, N., Kao, M., Tian, L., Darnall, B. D., Gross, J. J., Mackey, et al
2018; 19
- **Technical note: can resting state functional MRI assist in routine clinical diagnosis?** *BJR case reports*
Harman, P., Law, C., Pardhan, S., Lin, Z. H., Johnson, M., Walter, S., Fassbender, K., Aspinall, R., Grunwald, I. Q.
2018; 4 (4): 20180030
- **Dynamic per slice Shimming for Simultaneous Brain and Spinal Cord fMRI.** *Magnetic resonance in medicine*
Islam, H., Law, C. S., Weber, K. A., Mackey, S. C., Glover, G. H.
2018
- **Technical note: can resting state functional MRI assist in routine clinical diagnosis?** *BJR CASE REPORTS*
Harman, P., Law, C., Pardhan, S., Lin, Z., Johnson, M., Walter, S., Fassbender, K., Aspinall, R., Grunwald, I. Q.
2018; 4 (4)
- **Interleaved Spiral-In/Out With Application to Functional MRI (fMRI)** *MAGNETIC RESONANCE IN MEDICINE*
Law, C. S., Glover, G. H.
2009; 62 (3): 829-834
- **Sliding-Window Sensitivity Encoding (SENSE) Calibration for Reducing Noise in Functional MRI (fMRI)** *MAGNETIC RESONANCE IN MEDICINE*
Law, C. S., Liu, C., Glover, G. H.
2008; 60 (5): 1090-1103
- **Spiral-in/out BOLD fMRI for increased SNR and reduced susceptibility artifacts** *MAGNETIC RESONANCE IN MEDICINE*
Glover, G. H., Law, C. S.
2001; 46 (3): 515-522

PRESENTATIONS

- Simultaneous Spinal Cord-Brain fMRI Preprocessing Pipeline