



Kenneth Weber, DC, PhD

Assistant Professor (Research) of Anesthesiology, Perioperative and Pain Medicine (Adult Pain) and, by courtesy, of Neurosurgery (Adult Neurosurgery) and of Radiology (Neuroimaging and Neurointervention)

 Curriculum Vitae available Online

Bio

BIO

Dr. Weber directs the Neuromuscular Insight Lab. Dr. Weber's research seeks to develop quantitative markers of sensory and motor function, including pain, using machine-learning and advanced brain, spinal cord, and musculoskeletal magnetic resonance imaging. Dr. Weber aims to use these techniques to better understand the neuropathology of neurological and musculoskeletal conditions and discover more effective treatments and preventative strategies.

ACADEMIC APPOINTMENTS

- Assistant Professor (Research), Anesthesiology, Perioperative and Pain Medicine
- Assistant Professor (Research) (By courtesy), Neurosurgery
- Assistant Professor (Research) (By courtesy), Radiology
- Member, Bio-X
- Member, Wu Tsai Human Performance Alliance
- Member, Wu Tsai Neurosciences Institute

HONORS AND AWARDS

- Dermatomal Mapping with Spinal Cord Functional Magnetic Resonance Imaging (R01NS133305), National Institute of Neurological Disorders and Stroke (2023-2028)
- Neuromuscular Signatures to Predict Surgical Response in Cervical Myelopathy (R01NS128478), National Institute of Neurological Disorders and Stroke (2023-2028)
- NIH Clinical Research Extramural Loan Repayment Program Award (L30NS108301), National Institute of Neurological Disorders and Stroke (2022 - 2024)
- George B. McClelland Researcher of the Year Award, American Chiropractic Association (2021)
- Mentored Patient-Oriented Research Career Development Award (K23NS104211), National Institute of Neurological Disorders and Stroke (2018 - 2023)
- NIH Clinical Research Extramural Loan Repayment Program Award (L30NS108301), National Institute of Neurological Disorders and Stroke (2020 - 2022)
- MRI and Machine Learning to Improve Early Prognosis and Clinical Management after SCI (R03HD094577), Eunice Kennedy Shriver National Institute of Child Health and Human Development (2019 - 2021)
- NIH Clinical Research Extramural Loan Repayment Program Award (L30NS108301), National Institute of Neurological Disorders and Stroke (2018 - 2020)
- Ruth L. Kirschstein National Research Service Award Individual Fellowship (F32AT007800), National Center for Complementary and Integrative Health (2012 - 2015)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Staff Chiropractor, Palo Alto Veterans Affairs Health Care System (2024 - present)
- Senior Fellow, Chiropractic Academy for Research Leadership (2024 - present)
- Fellow, Chiropractic Academy for Research Leadership (2020 - 2024)
- Co-Section Editor — Psychology, Psychiatry & Brain Neuroscience, Pain Medicine (2022 - present)
- Associate Editor, Pain Medicine (2020 - 2022)
- Ambassador, NIH Loan Repayment Program (2019 - present)

PROFESSIONAL EDUCATION

- Postdoctoral Fellowship, Stanford University , Clinical Pain Research (2018)
- PhD, Northwestern University , Neuroscience (2016)
- DC, Palmer College of Chiropractic , Chiropractic (2009)
- BS, Saginaw Valley State University , Biology (2006)

LINKS

- Neuromuscular Insight Lab: <https://nilab.stanford.edu/>
- ResearchGate: https://www.researchgate.net/profile/Kenneth_Weber3
- Google Scholar: <https://scholar.google.com/citations?hl=en&user=oaG0LekAAAAJ>
- LinkedIn: <https://www.linkedin.com/in/kennethaweberii>
- GitHub: <https://github.com/kennethaweberii/>
- MuscleMap Toolbox: <https://musclemap.github.io/MuscleMap/>
- Spinal Cord Toolbox: <https://spinalcordtoolbox.com>
- Spinal Cord Workshop: <https://nilab.stanford.edu/stanford-spinal-cord-imaging-workshop>
- Musculoskeletal Workshop: <https://nilab.stanford.edu/stanford-musculoskeletal-imaging-workshop>

Teaching

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Denna Dashti, Joel Fundaun

Publications

PUBLICATIONS

- **Mapping hand function with simultaneous brain-spinal cord functional MRI.** *Imaging neuroscience (Cambridge, Mass.)*
Oliva, V., Bédard, S., Kaptan, M., Pfyffer, D., Chy, B., Aufrichtig, S., Berhe, N., Chaudhari, A. S., Tharin, S., Hu, S. S., Ratliff, J., Smith, Z. A., Smith, et al
2025; 3
- **Leg Muscle Volume, Intramuscular Fat and Force Generation: Insights From a Computer-Vision Model and Fat-Water MRI.** *Journal of cachexia, sarcopenia and muscle*
Smith, A. C., Laguna, J. M., Wesselink, E. O., Scott, Z. E., Jenkins, H., Thornton, W. A., Wasielewski, M., Connor, J., Delp, S., Chaudhari, A. S., Parrish, T. B., Mackey, S., Elliott, et al
2025; 16 (1): e13735

- **Three-dimensional spatial distribution of lumbar paraspinal intramuscular fat revealed by spatial parametric mapping.** *European spine journal : official publication of the European Spine Society, the European Spinal Deformity Society, and the European Section of the Cervical Spine Research Society*
Weber, K. A., Wesselink, E. O., Gutierrez, J., Law, C. S., Mackey, S., Rattliff, J., Hu, S., Chaudhari, A. S., Pool-Goudzwaard, A., Coppieters, M. W., Elliott, J. M., Hancock, M., De Leener, et al
2024
- **MuscleMap: An Open-Source, Community-Supported Consortium for Whole-Body Quantitative MRI of Muscle.** *Journal of imaging*
McKay, M. J., Weber, K. A., Wesselink, E. O., Smith, Z. A., Abbott, R., Anderson, D. B., Ashton-James, C. E., Atyeo, J., Beach, A. J., Burns, J., Clarke, S., Collins, N. J., Coppieters, et al
2024; 10 (11)
- **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
- **A single dermatome clinical prediction rule for independent walking one year after spinal cord injury.** *Archives of physical medicine and rehabilitation*
Smith, A. C., Draganich, C., Thornton, W. A., Berliner, J. C., Lennarson, P. J., Rejc, E., Sevigny, M., Charlifue, S., Tefertiller, C., Weber, K. A.
2023
- **Lateral corticospinal tract and dorsal column damage: predictive relationships with motor and sensory scores at discharge from acute rehabilitation after spinal cord injury.** *Archives of physical medicine and rehabilitation*
Smith, A. C., O'Dell, D. R., Albin, S. R., Berliner, J. C., Dungan, D., Robinson, E., Elliott, J. M., Carballido-Gamio, J., Stevens-Lapsley, J., Weber, K. A.
2021
- **Lateralization of cervical spinal cord activity during an isometric upper extremity motor task with functional magnetic resonance imaging.** *NeuroImage*
Weber, K. A., Chen, Y., Wang, X., Kahnt, T., Parrish, T. B.
2016; 125: 233-243
- **The CARL II cohort: what we did and what came out of it.** *Chiropractic & manual therapies*
Hartvigsen, J., Aspinall, S., Downie, A., Harsted, S., Jenkins, H., Marchand, A. A., McNaughton, D., Miller, A., Nim, C., Nyirö, L., Roseen, E. J., Young, J. J., Weber, et al
2026; 34 (1)
- **Multisite Spinal Cord and Canal Morphometry Reveals Age-Linked and Sex-Linked Structural Vulnerability in Degenerative Cervical Myelopathy Outcomes.** *Neurosurgery*
Smith, Z. A., Haynes, G., Bedard, S., Hameed, S., Khan, A. F., Dastgir, A., Baha, A., Kumar, S. G., Van Hal, M., Al Tamimi, M., Hu, S. S., Dhaher, Y., Shakir, et al
2026
- **Effects of aquatic therapy vs. standard care on gluteal muscle morphology and function in individuals with chronic low back pain: a randomized controlled trial.** *BMC sports science, medicine & rehabilitation*
Montpetit, C., Vaillancourt, N., Rosenstein, B., Wesselink, E. O., Dover, G., Weiss, C., Papula, L. A., Melek, A., Weber, K. A., Elliott, J. M., Fortin, M.
2026
- **Image-informed biphasic constitutive modeling reveals degeneration-dependent evolution of composite disc material behavior** *MATERIALS TODAY COMMUNICATIONS*
Li, S., Sun, Z., Hu, B., Yin, M., Dai, Y., Kong, D., Zhang, Y., Liang, Z., Qin, Y., Weber, K. A., Chen, H., Wang, Y., Sun, et al
2026; 53
- **Presence of midsagittal tissue bridges and walking ability 1-year post spinal cord injury.** *The journal of spinal cord medicine*
Thornton, W. A., Tefertiller, C., Weber, K. A., Mañago, M., Wiley, L., Connor, J., Stevens-Lapsley, J., Pfyffer, D., Smith, A. C.
2026: 1-9
- **Muscle Composition as a Novel Prognostic Tool for Pain, Frailty, and Sarcopenia.** *Clinics in geriatric medicine*
Masnoon, N., Cornwall, J., Elliott, J. M., Glare, P., Hilmer, S. N., McKay, M., Walton, D. M., Weber, K., Wesselink, E.
2026; 42 (1): 61-73

- **Monitoring morphometric drift in lifelong learning segmentation of the spinal cord.** *Imaging neuroscience (Cambridge, Mass.)*
Naga Karthik, E., Bédard, S., Valošek, J., Aigner, C. S., Bannier, E., Bednařík, J., Callot, V., Combes, A., Curt, A., David, G., Eippert, F., Farner, L., Fehlings, et al
2026; 4
- **Higher lumbodorsal epimuscular fat associated with recurrent low back pain: an exploratory secondary analysis of cross-sectional MRI data with 1-year follow-up.** *European spine journal : official publication of the European Spine Society, the European Spinal Deformity Society, and the European Section of the Cervical Spine Research Society*
van Amstel, R. N., Wesselink, E. O., Weide, G., Hooijmans, M. T., Elliott, J. M., Weber li, K. A., Hancock, M. J., Jaspers, R. T., Pool-Goudzwaard, A. L.
2026
- **The relation between bulk (external) and internal measures of spinal stiffness.** *Chiropractic & manual therapies*
Nim, C., Weber li, K. A., O'Neill, S., Paulsen, R. T., Culmsee-Holm, L., Wesselink, E. O., Sun, Y. L., Jun, P., Breen, A., Kawchuk, G. N.
2025; 33 (1): 52
- **A Magnetic Resonance Imaging (MRI) Investigation of Cervical Spine Muscle Characteristics After Concussion: Identifying Return-to-Play Clearance and Subsequent Injury Prognosis.** *Journal of child neurology*
Smulligan, K. L., Smith, A. C., Weber, K. A., Carry, P., Esopenko, C., Baugh, C. M., Elliott, J., Snodgrass, S., Wesselink, E. O., Wilson, J. C., Howell, D. R.
2025: 8830738251392519
- **Automated Segmentation of Forearm Muscles: Clinical Associations With Hand Function, Muscle Volume and Intramuscular Fat.** *JCSM communications*
Fundaun, J., Oliva, V., Bédard, S., Wesselink, E. O., Lynn, B. P., Pai S, A., Pfyffer, D., Kaptan, M., Berhe, N., Ratliff, J., Hu, S. S., Smith, Z. A., Hastie, et al
2025; 8 (2): e70015
- **Magnetization transfer MRI (MT-MRI) detects white matter damage beyond the primary site of compression in degenerative cervical myelopathy using a novel semi-automated analysis.** *Computers in biology and medicine*
Muhammad, F., Weber li, K. A., Haynes, G., Villeneuve, L., Smith, L., Baha, A., Hameed, S., Khan, A. F., Dhaher, Y., Parrish, T., Rohan, M., Smith, Z. A.
2025; 197 (Pt B): 111083
- **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., Tsvaka, D., Van De Ville, D., Eippert, et al
2025; 3
- **Scapular pain in cervical radiculopathy: A scoping review.** *North American Spine Society journal*
Carmichael, J., Weber, K. A., Rubinstein, S., Svoboda, E., Bade, M.
2025; 23: 100619
- **Rootlets-based registration to the PAM50 spinal cord template** *IMAGING NEUROSCIENCE*
Bedard, S., Valosek, J., Oliva, V., Weber II, K. A., Cohen-Adad, J.
2025; 3
- **Baseline characteristics of participants in the Biomarkers for Evaluating Spine Treatments clinical trial: a sequential multiple assignment randomized trial for chronic low back pain†.** *Pain medicine (Malden, Mass.)*
Rowland, B., Barth, K. S., Bell, K. M., Brooks, A. K., Chadwick, A. L., Cleven, A., Hurley, R. W., Mackey, S., Patel, K. V., Piva, S. R., Schneider, M. J., Al-Kadhi, F., Asante-Nketiah, et al
2025
- **Cross-sectional relationships between spinal cord gray matter volume and pain in individuals with fibromyalgia and opioid use.** *Scientific reports*
Baker, A. K., Rosser, M. A., Park, S. H., Weber, K. A., Martucci, K. T.
2025; 15 (1): 27810
- **Reliability of SCISeg Automated Measurement of Midsagittal Tissue Bridges in Spinal Cord Injuries Using an External Dataset.** *Topics in spinal cord injury rehabilitation*
Connor, J. R., Thornton, W. A., Weber, K. A., Pfyffer, D., Freund, P., Tefertiller, C., Smith, A. C.

2025; 31 (2): 39-49

- **Semiautomated Pipeline Effectively Assesses Severity and Monitor Disease Progression in Compressed Spinal Cord of Degenerative Cervical Myelopathy Patients** *NEUROSURGERY PRACTICE*
Muhammad, F., Weber II, K. A., Bedard, S., Haynes, G., Smith, Z. A.
2025; 6 (2)
- **Lumbar Multifidus Intramuscular fat Concentrations are Associated With Recovery Following Decompressive Surgery for Lumbar Spinal Stenosis. A Longitudinal Cohort Study With 5-year Follow-up.** *Spine*
Wesselink, E. O., Verheijen, E., Djuric, N., Coppieters, M., Elliott, J., Weber, K. A., Wouter, M., Vleggeert-Lankamp, C., Pool-Goudzwaard, A.
2025
- **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
- **Impact of Pain Self-Efficacy on Health Outcomes in High-Impact Chronic Pain: A Longitudinal Study.** *The Clinical journal of pain*
You, D. S., Lannon, E., Kim, S., Dildine, T. C., Weber, K. A., Raney, E., Mackey, S. C.
2025
- **The Design and Rationale of the Biomarkers for Evaluating Spine Treatments (BEST) Trial: A Sequential Multiple Assignment Randomized Trial.** *Pain medicine (Malden, Mass.)*
Mauck, M. C., Barth, K. S., Bell, K. M., Brooks, A. K., Chadwick, A. L., Gunn, C. A., Hurley, R. W., Ivanova, A., Piva, S. R., Schneider, M. J., Bailey, J. F., Bagaason, S., Batorsky, et al
2025
- **Innovations in acute and chronic pain biomarkers: enhancing diagnosis and personalized therapy.** *Regional anesthesia and pain medicine*
Mackey, S., Aghaeepour, N., Gaudilliere, B., Kao, M. C., Kaptan, M., Lannon, E., Pfyffer, D., Weber, K.
2025; 50 (2): 110-120
- **Developing a three-dimensional convolutional neural network for full volume auto-segmentation of shoulder Dixon MRI with comparison to Goutallier classification and two-dimensional muscle quality assessment.** *Journal of shoulder and elbow surgery*
Kim, B., Gandomkar, Z., McKay, M. J., Seitz, A. L., Wesselink, E. O., Cass, B., Young, A. A., Linklater, J. M., Szajer, J., Subbiah, K., Elliott, J. M., Weber, K. A.
2025
- **Towards contrast-agnostic soft segmentation of the spinal cord.** *Medical image analysis*
Bédard, S., Karthik, E. N., Tsagkas, C., Pravatà, E., Granziera, C., Smith, A., Weber II, K. A., Cohen-Adad, J.
2025; 101: 103473
- **Responsiveness to transcutaneous spinal stimulation for upper extremity recovery following spinal cord injury: A case series exploration of midsagittal tissue bridges.** *The journal of spinal cord medicine*
Smith, A. C., Morey, C., Thornton, W. A., Connor, J. R., Pfyffer, D., Weber II, K. A., Will, K., Tefertiller, C.
2025: 1-7
- **Problem of pain in the USA: evaluating the generalisability of high-impact chronic pain models over time using National Health Interview Survey (NHIS) data.** *BMJ public health*
Falasinnu, T., Hossain, M. B., Karim, M. E., Weber, K. A., Mackey, S.
2025; 3 (1)
- **SClsegV2: A Universal Tool for Segmentation of Intramedullary Lesions in Spinal Cord Injury**
Karthik, E., Valosek, J., Farner, L., Pfyffer, D., Schading-Sassenhausen, S., Lebret, A., David, G., Smith, A. C., Weber, K. A., Seif, M., Freund, P., Cohen-Adad, J.
edited by Wu, S., Shabestari, B., Xing, L.
SPRINGER INTERNATIONAL PUBLISHING AG.2025: 198-209
- **New insights into the impact of bed rest on lumbopelvic muscles: A computer-vision model approach to measure fat fraction changes.** *Journal of applied physiology (Bethesda, Md. : 1985)*
Wesselink, E. O., Hides, J., Elliott, J. M., Hoggarth, M., Weber, K. A., Salomoni, S. E., Tran, V., Lindsay, K., Hughes, L., Weber, T., Scott, J., Hodges, P. W., Caplan, et al

2024

- **Artificial Intelligence in Spine and Paraspinal Muscle Analysis.** *Advances in experimental medicine and biology*
Elliott, J. M., Wesselink, E. O., Crawford, R. J., Cornwall, J., McKay, M., Smith, Z., Weber, K. A.
2024; 1462: 465-473
- **SCIsseg: Automatic Segmentation of Intramedullary Lesions in Spinal Cord Injury on T2-weighted MRI Scans.** *Radiology. Artificial intelligence*
Naga Karthik, E., Valošek, J., Smith, A. C., Pfyffer, D., Schading-Sassenhausen, S., Farner, L., Weber, K. A., Freund, P., Cohen-Adad, J.
2024: e240005
- **Tract-specific magnetization transfer ratio provides insights into the severity of degenerative cervical myelopathy.** *Spinal cord*
Haynes, G., Muhammad, F., Weber, K. A., Khan, A. F., Hameed, S., Shakir, H., Van Hal, M., Dickson, D., Rohan, M., Dhaher, Y., Parrish, T., Ding, L., Smith, et al
2024
- **Muscle Fat and Volume Differences in People With Hip-Related Pain Compared With Controls: A Machine Learning Approach.** *Journal of cachexia, sarcopenia and muscle*
Stewart, C., Wesselink, E. O., Perraton, Z., Weber, K. A., King, M. G., Kemp, J. L., Mentiplay, B. F., Crossley, K. M., Elliott, J. M., Heerey, J. J., Scholes, M. J., Lawrenson, P. R., Calabrese, et al
2024
- **Patterns of cortical thickness alterations in degenerative cervical myelopathy: associations with dexterity and gait dysfunctions.** *Brain communications*
Muhammad, F., Weber, K. A., Rohan, M., Smith, Z. A.
2024; 6 (5): fcae279
- **What is normal age-related thigh muscle composition among 45- to 84-year-old adults from the UK Biobank study.** *GeroScience*
Anderson, D. B., Beach, A. J., Chen, L., Feng, H. J., McKay, M. J., Smith, Z. A., Weber, K. A., Wesselink, E. O., Elliott, J. M.
2024
- **Reduced Cervical Muscle Fat Infiltrate Is Associated with Self-Reported Recovery from Chronic Idiopathic Neck Pain Over Six Months: A Magnetic Resonance Imaging Longitudinal Cohort Study.** *Journal of clinical medicine*
Snodgrass, S. J., Weber, K. A., Wesselink, E. O., Stanwell, P., Elliott, J. M.
2024; 13 (15)
- **Cervical Spinal Cord Morphometrics in Degenerative Cervical Myelopathy: Quantification using Semi-automated Normalized Technique and Correlation with Neurological Dysfunctions.** *The spine journal : official journal of the North American Spine Society*
Muhammad, F., Weber, K. A., Bédard, S., Haynes, G., Smith, L., Khan, A. F., Hameed, S., Gray, K., McGovern, K., Rohan, M., Ding, L., Van Hal, M., Dickson, et al
2024
- **Spinal cord lesion MRI and behavioral outcomes in a miniature pig model of spinal cord injury: exploring preclinical potential through an ad hoc comparison with human SCI.** *Spinal cord series and cases*
Smith, A. C., Ahmed, R. U., Weber, K. A., Negahdar, M., Gibson, D., Boakye, M., Rejc, E.
2024; 10 (1): 44
- **Lesion characteristics are associated with bowel, bladder, and overall independence following cervical spinal cord injury.** *The journal of spinal cord medicine*
Thornton, W. A., Smulligan, K., Weber, K. A., Tefertiller, C., Manago, M., Sevigny, M., Wiley, L., Stevens-Lapsley, J., Smith, A. C.
2024: 1-9
- **Prognostic value of tissue bridges in cervical spinal cord injury: a longitudinal, multicentre, retrospective cohort study.** *The Lancet. Neurology*
Pfyffer, D., Smith, A. C., Weber, K. A., Grillhoesl, A., Mach, O., Draganich, C., Berliner, J. C., Tefertiller, C., Leister, I., Maier, D., Schwab, J. M., Thompson, A., Curt, et al
2024
- **Sagittal balance parameters measurement on cervical spine MR images based on superpixel segmentation.** *Frontiers in bioengineering and biotechnology*
Zhong, Y. F., Dai, Y. X., Li, S. P., Zhu, K. J., Lin, Y. P., Ran, Y., Chen, L., Ruan, Y., Yu, P. F., Li, L., Li, W. X., Xu, C. L., Sun, et al
2024; 12: 1337808

- **Response to Letter to the Editor on "A single dermatome clinical prediction rule for independent walking one year after spinal cord injury."** *Archives of physical medicine and rehabilitation*
Smith, A. C., Draganich, C., Thornton, W. A., Berliner, J. C., Lennarson, P. J., Rejc, E., Sevigny, M., Charlifue, S., Tefertiller, C., Weber, K. A.
2024
- **Peak Slope Ratio of the Recruitment Curves Compared to Muscle Evoked Potentials to Optimize Standing Configurations with Percutaneous Epidural Stimulation after Spinal Cord Injury** *JOURNAL OF CLINICAL MEDICINE*
Alazzam, A. M., Ballance, W. B., Smith, A. C., Rejc, E., Weber, K. A., Trainer, R., Gorgey, A. S.
2024; 13 (5)
- **Quantifying lumbar paraspinal intramuscular fat: Accuracy and reliability of automated thresholding models.** *North American Spine Society journal*
Wesselink, E. O., Elliott, J. M., Pool-Goudzwaard, A., Coppieters, M. W., Pevenage, P. P., Di Ieva, A., Weber, K. A.
2024; 17: 100313
- **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
- **The association between lateral hip muscle size/intramuscular fat infiltration and hip strength in active young adults with long standing hip/groin pain.** *Physical therapy in sport : official journal of the Association of Chartered Physiotherapists in Sports Medicine*
Perraton, Z., Mosler, A. B., Lawrenson, P. R., Weber, K. A., Elliott, J. M., Wesselink, E. O., Crossley, K. M., Kemp, J. L., Stewart, C., Girdwood, M., King, M. G., Heerey, J. J., Scholes, et al
2023; 65: 95-101
- **Evaluating tissue injury in cervical spondylotic myelopathy with spinal cord MRI: a systematic review.** *European spine journal : official publication of the European Spine Society, the European Spinal Deformity Society, and the European Section of the Cervical Spine Research Society*
Khan, A. F., Mohammadi, E., Haynes, G., Hameed, S., Rohan, M., Anderson, D. B., Weber, K. A., Muhammad, F., Smith, Z. A.
2023
- **Isolating Neurologic Deficits in Cervical Spondylotic Myelopathy: A Case-Controlled Study, Using the NIH Toolbox Motor Battery.** *Neurology. Clinical practice*
Muhammad, F., Baha, A., Haynes, G., Shakir, H., Omini, M., Martin, M., Weber, K. A., Paliwal, M., Van Hal, M., Dickson, D., Dhaher, Y., Zhao, Y. D., Smith, et al
2023; 13 (2): e200126
- **The Problem of Pain in the United States: A Population-Based Characterization of Biopsychosocial Correlates of High Impact Chronic Pain using the National Health Interview Survey.** *The journal of pain*
Falasinnu, T., Hossain, M. B., Weber, K. A., Helmick, C. G., Karim, M. E., Mackey, S.
2023
- **Biopsychosocial Sequelae and Recovery Trajectories From Whiplash Injury Following a Motor Vehicle Collision.** *The spine journal : official journal of the North American Spine Society*
Elliott, J. M., Walton, D. M., Albin, S. R., Courtney, D. M., Siegmund, G. P., Carroll, L. J., Weber, K. A., Smith, A. C.
2023
- **Predicting Outdoor Walking 1 Year After Spinal Cord Injury: A Retrospective, Multisite External Validation Study.** *Journal of neurologic physical therapy : JNPT*
Draganich, C., Weber, K. A., Thornton, W. A., Berliner, J. C., Sevigny, M., Charlifue, S., Tefertiller, C., Smith, A. C.
2023
- **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
- **Is fatty infiltration in paraspinal muscles reversible with exercise in people with low back pain? A systematic review.** *European spine journal : official publication of the European Spine Society, the European Spinal Deformity Society, and the European Section of the Cervical Spine Research Society*
Wesselink, E. O., Pool, J. J., Mollema, J., Weber, K. A., Elliott, J. M., Coppieters, M. W., Pool-Goudzwaard, A. L.
2022

- **Greater muscle volume and muscle fat infiltrate in the deep cervical spine extensor muscles (multifidus with semispinalis cervicis) in individuals with chronic idiopathic neck pain compared to age and sex-matched asymptomatic controls: a cross-sectional study.** *BMC musculoskeletal disorders*
Snodgrass, S. J., Stanwell, P., Weber, K. A., Shepherd, S., Kennedy, O., Thompson, H. J., Elliott, J. M.
2022; 23 (1): 973
- **Effects of variability in manually contoured spinal cord masks on fMRI co-registration and interpretation.** *Frontiers in neurology*
Hoggarth, M. A., Wang, M. C., Hemmerling, K. J., Vigotsky, A. D., Smith, Z. A., Parrish, T. B., Weber, K. A., Bright, M. G.
2022; 13: 907581
- **Editorial: Mechanisms and models of musculoskeletal pain and nonpharmacological treatment.** *Frontiers in integrative neuroscience*
Reed, W. R., Weber, K. A., Martins, D. F.
2022; 16: 998413
- **Convolutional neural networks for the automatic segmentation of lumbar paraspinal muscles in people with low back pain.** *Scientific reports*
Wesselink, E. O., Elliott, J. M., Coppieters, M. W., Hancock, M. J., Cronin, B., Pool-Goudzwaard, A., Weber, K. A.
2022; 12 (1): 13485
- **Towards defining muscular regions of interest from axial magnetic resonance imaging with anatomical cross-reference: a scoping review of lateral hip musculature.** *BMC musculoskeletal disorders*
Perraton, Z., Lawrenson, P., Mosler, A. B., Elliott, J. M., Weber, K. A., Flack, N. A., Cornwall, J., Crawford, R. J., Stewart, C., Semciw, A. I.
2022; 23 (1): 533
- **Improving the measurement of intrinsic foot muscle morphology and composition from high-field (7T) magnetic resonance imaging.** *Journal of biomechanics*
Franetovich Smith, M. M., Mendis, M. D., Weber, K. A., Elliott, J. M., Ho, R., Wilkes, M. J., Collins, N. J.
2022; 140: 111164
- **Preventive Supplementation of Omega-3 Reduces Pain and Pro-inflammatory Cytokines in a Mouse Model of Complex Regional Pain Syndrome Type I.** *Frontiers in integrative neuroscience*
de Oliveira Galassi, T., Fernandes, P. F., Salgado, A. S., Cidral-Filho, F. J., Piovezan, A. P., Lüdtkke, D. D., Mack, J. M., Weber, K. A., Reed, W. R., Bobinski, F., Martins, D. F.
2022; 16: 840249
- **Differences in Structural Brain Characteristics Between Individuals with Chronic Nonspecific Neck Pain and Asymptomatic Controls: A Case-Control Study.** *Journal of pain research*
de Zoete, R. M., Stanwell, P., Weber, K. A., Snodgrass, S. J.
2022; 15: 521-531
- **Utilization of Mid-Thigh Magnetic Resonance Imaging to Predict Lean Body Mass and Knee Extensor Strength in Obese Adults.** *Frontiers in rehabilitation sciences*
Bodkin, S. G., Smith, A. C., Bergman, B. C., Huo, D., Weber, K. A., Zarini, S., Kahn, D., Garfield, A., Macias, E., Harris-Love, M. O.
2022; 3
- **Spinal Cord Tissue Bridges Validation Study: Predictive Relationships With Sensory Scores Following Cervical Spinal Cord Injury.** *Topics in spinal cord injury rehabilitation*
Smith, A. C., O'Dell, D. R., Thornton, W. A., Dungan, D., Robinson, E., Thaker, A., Gisbert, R., Weber, K. A., Berliner, J. C., Albin, S. R.
2022; 28 (2): 111-115
- **Response to Lawrence DJ: the global summit on the efficacy and effectiveness of spinal manipulative therapy for the prevention and treatment of non-musculoskeletal disorders: a systematic review of the literature.** *Chiropractic & manual therapies*
Cote, P., Hartvigsen, J., Axen, I., Leboeuf-Yde, C., Corso, M., Shearer, H., Wong, J., Marchand, A., Cassidy, J. D., French, S., Kawchuk, G. N., Mior, S., Poulsen, et al
2021; 29 (1): 26
- **Classifying chronic pain using multidimensional pain-agnostic symptom assessments and clustering analysis.** *Science advances*
Gilam, G., Cramer, E. M., Webber, K. A., Ziadni, M. S., Kao, M. C., Mackey, S. C.
2021; 7 (37): eabj0320
- **Fatty infiltration in cervical flexors and extensors in patients with degenerative cervical myelopathy using a multi-muscle segmentation model.** *PLoS one*

- Paliwal, M., Weber, K. A., Smith, A. C., Elliott, J. M., Muhammad, F., Dahdaleh, N. S., Bodurka, J., Dhaheer, Y., Parrish, T. B., Mackey, S., Smith, Z. A. 2021; 16 (6): e0253863
- **Spinal cord imaging markers and recovery of standing with epidural stimulation in individuals with clinically motor complete spinal cord injury.** *Experimental brain research*
Smith, A. C., Angeli, C. A., Ugiliweneza, B., Weber, K. A., Bert, R. J., Negahdar, M., Mesbah, S., Boakye, M., Harkema, S. J., Rejc, E. 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
 - **Multi-muscle deep learning segmentation to automate the quantification of muscle fat infiltration in cervical spine conditions.** *Scientific reports*
Weber, K. A., Abbott, R., Bojilov, V., Smith, A. C., Wasielewski, M., Hastie, T. J., Parrish, T. B., Mackey, S., Elliott, J. M. 2021; 11 (1): 16567
 - **Spinal Cord Resting State Activity in Individuals With Fibromyalgia Who Take Opioids.** *Frontiers in neurology*
Martucci, K. T., Weber, K. A., Mackey, S. C. 2021; 12: 694271
 - **The influence of conventional T2 MRI indices in predicting who will walk outside one year after spinal cord injury.** *The journal of spinal cord medicine*
Berliner, J. C., O'Dell, D. R., Albin, S. R., Dungan, D. n., Sevigny, M. n., Elliott, J. M., Weber, K. A., Abdie, D. R., Anderson, J. S., Rich, A. A., Seib, C. A., Sagan, H. G., Smith, et al 2021: 1–7
 - **The global summit on the efficacy and effectiveness of spinal manipulative therapy for the prevention and treatment of non-musculoskeletal disorders: a systematic review of the literature.** *Chiropractic & manual therapies*
Côté, P. n., Hartvigsen, J. n., Axén, I. n., Leboeuf-Yde, C. n., Corso, M. n., Shearer, H. n., Wong, J. n., Marchand, A. A., Cassidy, J. D., French, S. n., Kawchuk, G. N., Mior, S. n., Poulsen, et al 2021; 29 (1): 8
 - **New insights into intrinsic foot muscle morphology and composition using ultra-high-field (7-Tesla) magnetic resonance imaging.** *BMC musculoskeletal disorders*
Franetovich Smith, M. M., Elliott, J. M., Al-Najjar, A. n., Weber, K. A., Hoggarth, M. A., Vicenzino, B. n., Hodges, P. W., Collins, N. J. 2021; 22 (1): 97
 - **Spinal manipulation and modulation of pain sensitivity in persistent low back pain: a secondary cluster analysis of a randomized trial.** *Chiropractic & manual therapies*
Nim, C. G., Weber, K. A., Kawchuk, G. N., O'Neill, S. n. 2021; 29 (1): 10
 - **Misinformation, chiropractic, and the COVID-19 pandemic.** *Chiropractic & manual therapies*
Axen, I., Bergstrom, C., Bronson, M., Cote, P., Nim, C. G., Goncalves, G., Hebert, J. J., Hertel, J. A., Innes, S., Larsen, O. K., Meyer, A., O'Neill, S., Perle, et al 2020; 28 (1): 65
 - **Axial MRI biomarkers of spinal cord damage to predict future walking and motor function: a retrospective study.** *Spinal cord*
Smith, A. C., Albin, S. R., O'Dell, D. R., Berliner, J. C., Dungan, D., Sevigny, M., Draganich, C., Elliott, J. M., Weber li, K. A. 2020
 - **Association of State Policies Allowing Medical Cannabis for Opioid Use Disorder With Dispensary Marketing for This Indication.** *JAMA network open*
Shover, C. L., Vest, N. A., Chen, D., Stueber, A., Falasinnu, T. O., Hah, J. M., Kim, J., Mackey, I., Weber, K. A., Ziadni, M., Humphreys, K.

2020; 3 (7): e2010001

- **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., Dhafer, Y., Parrish, T. B., Smith, Z. A.
2020: 116905
- **Midsagittal tissue bridges are associated with walking ability in incomplete spinal cord injury: A magnetic resonance imaging case series** *JOURNAL OF SPINAL CORD MEDICINE*
O'Dell, D. R., Weber, K. A., Berliner, J. C., Elliott, J. M., Connor, J. R., Cummins, D. P., Heller, K. A., Hubert, J. S., Kates, M. J., Mendoza, K. R., Smith, A. C.
2020; 43 (2): 268–71
- **Muscle fat infiltration following whiplash: A computed tomography and magnetic resonance imaging comparison.** *PloS one*
Elliott, J. M., Smith, A. C., Hoggarth, M. A., Albin, S. R., Weber, K. A., Haager, M. n., Fundaun, J. n., Wasielewski, M. n., Courtney, D. M., Parrish, T. B.
2020; 15 (6): e0234061
- **Macromolecular changes in spinal cord white matter characterize whiplash outcome at 1-year post motor vehicle collision.** *Scientific reports*
Hoggarth, M. A., Elliott, J. M., Smith, Z. A., Paliwal, M. n., Kwasny, M. J., Wasielewski, M. n., Weber, K. A., Parrish, T. B.
2020; 10 (1): 22221
- **Foot exercise plus education versus wait and see for the treatment of plantar heel pain (FEET trial): a protocol for a feasibility study.** *Journal of foot and ankle research*
Franetovich Smith, M. M., Collins, N. J., Mellor, R. n., Grimaldi, A. n., Elliott, J. n., Hoggarth, M. n., Weber li, K. A., Vicenzino, B. n.
2020; 13 (1): 20
- **Spinal Cord Imaging Markers and Recovery of Volitional Leg Movement With Spinal Cord Epidural Stimulation in Individuals With Clinically Motor Complete Spinal Cord Injury.** *Frontiers in systems neuroscience*
Rejc, E. n., Smith, A. C., Weber, K. A., Ugiliweneza, B. n., Bert, R. J., Negahdar, M. n., Boakye, M. n., Harkema, S. J., Angeli, C. A.
2020; 14: 559313
- **Magnetization Transfer Ratio and Morphometrics Of the Spinal Cord Associates with Surgical Recovery in Patients with Degenerative Cervical Myelopathy.** *World neurosurgery*
Paliwal, M. n., Weber, K. A., Hopkins, B. S., Cantrell, D. R., Hoggarth, M. A., Elliott, J. M., Dahdaleh, N. S., Mackey, S. n., Parrish, T. D., Dhafer, Y. n., Smith, Z. A.
2020
- **Machine Learning for the Prediction of Cervical Spondylotic Myelopathy: A Post Hoc Pilot Study of 28 Participants** *WORLD NEUROSURGERY*
Hopkins, B. S., Weber, K. A., Kesavabhotla, K., Paliwal, M., Cantrell, D. R., Smith, Z. A.
2019; 127: E436–E442
- **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
- **Evidence for decreased Neurologic Pain Signature activation following thoracic spinal manipulation in healthy volunteers and participants with neck pain.** *NeuroImage. Clinical*
Weber li, K. A., Wager, T. D., Mackey, S. n., Elliott, J. M., Liu, W. C., Sparks, C. L.
2019; 24: 102042
- **Are Magnetic Resonance Imaging Technologies Crucial to Our Understanding of Spinal Conditions?** *The Journal of orthopaedic and sports physical therapy*
Crawford, R. J., Fortin, M. n., Weber, K. A., Smith, A. n., Elliott, J. M.
2019: 1–32
- **Deep Learning Convolutional Neural Networks for the Automatic Quantification of Muscle Fat Infiltration Following Whiplash Injury.** *Scientific reports*
Weber, K. A., Smith, A. C., Wasielewski, M. n., Eghtesad, K. n., Upadhyayula, P. A., Wintermark, M. n., Hastie, T. J., Parrish, T. B., Mackey, S. n., Elliott, J. M.

2019; 9 (1): 7973

- **Establishing the inter-rater reliability of spinal cord damage manual measurement using magnetic resonance imaging.** *Spinal cord series and cases*
Cummins, D. P., Connor, J. R., Heller, K. A., Hubert, J. S., Kates, M. J., Wisniewski, K. R., Berliner, J. C., O'Dell, D. R., Elliott, J. M., Weber, K. A., Smith, A. C.
2019; 5: 20
- **Establishing the inter-rater reliability of spinal cord damage manual measurement using magnetic resonance imaging.** *Spinal cord series and cases*
Cummins, D. P., Connor, J. R., Heller, K. A., Hubert, J. S., Kates, M. J., Wisniewski, K. R., Berliner, J. C., O'Dell, D. R., Elliott, J. M., Weber, K. A., Smith, A. C.
2019; 5: 20
- **Altered Cervical Spinal Cord Resting State Activity in Fibromyalgia.** *Arthritis & rheumatology (Hoboken, N.J.)*
Martucci, K. T., Weber, K. A., Mackey, S. C.
2018
- **Tract-Specific Volume Loss on 3T MRI in Patients with Cervical Spondylotic Myelopathy.** *Spine*
Hopkins, B. S., Weber, K. A., Cloney, M. B., Paliwal, M. n., Parrish, T. B., Smith, Z. A.
2018
- **High-resolution magnetization transfer MRI in patients with cervical spondylotic myelopathy.** *Journal of clinical neuroscience : official journal of the Neurosurgical Society of Australasia*
Suleiman, L. I., Weber, K. A., Rosenthal, B. D., Bhatt, S. A., Savage, J. W., Hsu, W. K., Patel, A. A., Parrish, T. B.
2018
- **Ambulatory function in motor incomplete spinal cord injury: a magnetic resonance imaging study of spinal cord edema and lower extremity muscle morphometry.** *Spinal cord*
Smith, A. C., Weber, K. A., Parrish, T. B., Hornby, T. G., Tysseling, V. M., McPherson, J. G., Wasielewski, M., Elliott, J. M.
2017
- **Thermal Stimulation Alters Cervical Spinal Cord Functional Connectivity in Humans.** *Neuroscience*
Weber, K. A., Sentis, A. I., Bernadel-Huey, O. N., Chen, Y. n., Wang, X. n., Parrish, T. B., Mackey, S. n.
2017
- **Quantitative Magnetization Transfer MRI Measurements of the Anterior Spinal cord Region are Associated with Clinical Outcomes in Cervical Spondylotic Myelopathy.** *Spine*
Cloney, M. B., Smith, Z. A., Weber, K. A., Parrish, T. B.
2017
- **Lateral corticospinal tract damage correlates with motor output in incomplete spinal cord injury.** *Archives of physical medicine and rehabilitation*
Smith, A. C., Weber, K. A., O'Dell, D. R., Parrish, T. B., Wasielewski, M. n., Elliott, J. M.
2017
- **Advancements in Imaging Technology: Do They (or Will They) Equate to Advancements in Our Knowledge of Recovery in Whiplash?** *JOURNAL OF ORTHOPAEDIC & SPORTS PHYSICAL THERAPY*
Elliott, J. M., Dayanidhi, S., Hazle, C., Hoggarth, M. A., Mcpherson, J., Sparks, C. L., Weber, K. A.
2016; 46 (10): 862-873
- **Functional Magnetic Resonance Imaging of the Cervical Spinal Cord During Thermal Stimulation Across Consecutive Runs.** *NeuroImage*
Weber, K. A., Chen, Y., Wang, X., Kahnt, T., Parrish, T. B.
2016
- **Measuring Pain for Patients Seeking Physical Therapy: Can Functional Magnetic Resonance Imaging (fMRI) Help?** *Physical therapy*
Elliott, J. M., Owen, M. n., Bishop, M. D., Sparks, C. n., Tsao, H. n., Walton, D. M., Weber, K. A., Wideman, T. H.
2016
- **White matter microstructure changes induced by motor skill learning utilizing a body machine interface.** *NeuroImage*
Wang, X., Casadio, M., Weber, K. A., Mussa-Ivaldi, F. A., Parrish, T. B.

2013; 88C: 32-40

- **Understanding inhibitory mechanisms of lumbar spinal manipulation using H-reflex and F-wave responses: A methodological approach** *JOURNAL OF NEUROSCIENCE METHODS*

Dishman, J. D., Weber, K. A., Corbin, R. L., Burke, J. R.

2012; 210 (2): 169-177

- **Non-invasive brain stimulation enhances fine motor control of the hemiparetic ankle: implications for rehabilitation** *EXPERIMENTAL BRAIN RESEARCH*

Madhavan, S., Weber, K. A., Stinear, J. W.

2011; 209 (1): 9-17

- **Chiropractic students and research: assessing the research culture at a north american chiropractic college.** *The Journal of chiropractic education*

Weber li, K. A., He, X.

2010; 24 (1): 35-45