

Kenneth A. Weber II, DC, PhD

Assistant Professor
Department of Anesthesiology, Perioperative and Pain Medicine
Stanford University School of Medicine
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CURRENT APPOINTMENTS

Assistant Professor (Research)

Director, Neuromuscular Insight Lab
Stanford University School of Medicine
Department of Anesthesiology, Perioperative and Pain Medicine
Division of Pain Medicine
Palo Alto, CA

May 2025 – Present

Staff Chiropractor

Palo Alto Veterans Affairs Health Care System
Integrated Primary Care
Palo Alto, CA

Jan 2024 – Present

PAST APPOINTMENTS

Senior Research Scientist

Stanford University School of Medicine
Department of Anesthesiology, Perioperative and Pain Medicine
Division of Pain Medicine
Palo Alto, CA

Apr 2023 – Apr 2025

Instructor

Stanford University School of Medicine
Department of Anesthesiology, Perioperative and Pain Medicine
Division of Pain Medicine
Palo Alto, CA

Dec 2018 – Mar 2023

Postdoctoral Scholar

Stanford University School of Medicine
Department of Anesthesiology, Perioperative and Pain Medicine
Division of Pain Medicine
Palo Alto, CA

Jan 2016 – Dec 2018

EDUCATION

Postdoctoral Research Fellowship

Advisor: Sean Mackey, MD, PhD
Stanford University
Palo Alto, CA

Jan 2016 – Dec 2018

Doctor of Philosophy in Neuroscience

Specialization in Movement and Rehabilitation Science
Advisor: Todd B. Parrish, PhD
Northwestern University

Mar 2016

Chicago, IL

Doctor of Chiropractic

Palmer College of Chiropractic Florida
Port Orange, FL

Dec 2009

Bachelor of Science in Biology

Saginaw Valley State University
University Center, MI
Minor: Chemistry

May 2006

PROFESSIONAL LICENSURE

Chiropractor

State of California
State of Illinois

Jul 2017 – Present
Dec 2009 – Jul 2017

RESEARCH FUNDING

Dermatomal Mapping with Spinal Cord Functional Magnetic Resonance Imaging, R01 NS133305, National Institute of Neurological Disorders and Stroke, Role: Principal Investigator. Sep 2023 – May 2028.

Structural and Functional Imaging Markers in Degenerative Cervical Myelopathy, R01 NS129852, National Institute of Neurological Disorders and Stroke, PI: Dr. Zachary Smith at Oklahoma University Health Science Center, Role: Co-Investigator. Sep 2023 – May 2028.

MRI-Derived Neuromuscular Signatures to Predict Surgical Response in Degenerative Cervical Myelopathy, R01 NS128478, National Institute of Neurological Disorders and Stroke, Role: Principal Investigator. May 2023 – Jan 2028.

MRI-Based Neuromuscular Markers of Lumbar Spinal Stenosis, L30 NS108301, NIH Clinical Research Extramural Loan Repayment Program Award, National Institute of Neurological Disorders and Stroke, Role: Principal Investigator. Jul 2022 – Jun 2024.

Back Pain Consortium (BACPAC) Research Program Data Integration, Algorithm Development and Operations Management Center, U24 AR076730, National Institute of Neurological Disorders and Stroke, PI: Dr. Kevin Anstrom at University of North Carolina Chapel Hill, Role: Co-Investigator. Oct 2022 – May 2024.

Neuroimaging-Based Brain and Spinal Cord Biomarkers for Cervical Radiculopathy, K23 NS104211, Mentored Patient-Oriented Research Career Development Award, National Institute of Neurological Disorders and Stroke, Role: Principal Investigator. Sep 2018 – Aug 2024.

Brain-Based Multi-Modal MRI Models of Pain Severity and Upper Limb Motor Function, L30 NS108301, NIH Clinical Research Extramural Loan Repayment Program Award, National Institute of Neurological Disorders and Stroke, Role: Principal Investigator. Jul 2020 – Jun 2022.

Using fMRI to Determine if Differences Exist Between Hemodynamic Responses in Trigger Point Dry Needling Versus Sham Needling, Bradley University Center for Collaborative Brain Research Grant, Peoria, IL. Feb 2019 – Jan 2020.

MRI and Machine Learning to Improve Early Prognosis and Clinical Management after Spinal Cord Injury, R03 HD094577, National Institute of Child Health and Human Development, PI: Dr. Andrew

Smith at University of Colorado Denver, Role: Co-Investigator. Feb 2019 – Jan 2021.

Neuroimaging-Based Brain and Spinal Cord Biomarkers for Cervical Radiculopathy, L30 NS108301, NIH Clinical Research Extramural Loan Repayment Program Award, National Institute of Neurological Disorders and Stroke, Role: Principal Investigator. Jul 2018 – Jun 2020.

American Pain Society Young Investigator Travel Award, American Pain Society's Annual Meeting 2018, Anaheim, CA.

Interdisciplinary Research Training in Pain and Substance Use Disorders, Stanford University, T32 DA035165, NRSA Institutional Postdoctoral Training Grant, National Institute on Drug Abuse, Role: Trainee. Jan 2016 – Aug 2018.

Investigating Pain Processing in the Brain, Brainstem, and Spinal Cord with fMRI, NIH F32 AT007800, NRSA Individual Postdoctoral Training Grant, National Center for Complementary and Integrative Health, Role: Principal Investigator. Dec 2012 – Nov 2015.

Trainee stipend to attend the International Society for Magnetic Resonance in Medicine 21st Annual Meeting & Exhibition 2013, Salt Lake City, UT.

Training Program in the Neurobiology of Movement and Rehabilitation Sciences, Northwestern University, NIH T32 HD057845, NRSA Institutional Predoctoral Training Grant, National Institute of Child Health and Human Development, Role: Trainee. Mar 2012 – Nov 2012.

Weber II KA, Stinear JW. NCMIC Foundation, Inc. Investigating the biomechanical and neurophysiological effects of spinal manipulation. Oct 2010 – Sep 2014.

HONORS / AWARDS / ACTIVITIES / POSITIONS HELD

Honors , Graduated salutatorian from Palmer College of Chiropractic	Dec 2009
Honors , Graduated with honors from Palmer College of Chiropractic, magna cum laude	Dec 2009
Honors , Graduated with research honors from Palmer College of Chiropractic	Dec 2009
Honors , Graduated with honors from SVSU, summa cum laude	May 2006
Chair , Palmer College of Chiropractic Clinic Research Forum	Jan 2009 – Oct 2009
Member , Chi Rho Theta Chiropractic Research Honor Society	Dec 2009 – Present
Member , Foundation for Chiropractic Education and Research	Jun 2008 – Oct 2009
Certification , Electrodiagnosis, Palmer College of Chiropractic	May 2008 – Feb 2009
Member , American Chiropractic Association	Jun 2008 – Present
Member , Alpha Chi National College Honor Society	May 2006 – Present
Member , Organization for Human Brain Mapping	Dec 2011 – Present
Member , International Society for Magnetic Resonance in Medicine	Dec 2012 – Present
Member , Society for Neuroscience	May 2013 – Present
Member , Horizons for Youth, Young Professionals Board	Aug 2013 – Aug 2015
Member , American Pain Society	May 2016 – 2019
Member , Stanford Bio-X	May 2025 – Present
Member , Stanford Wu Tsai Neurosciences Institute	May 2025 – Present
Member , Stanford Wu Tsai Human Performance Alliance	May 2025 – Present
Big Sibling , Horizons for Youth	Mar 2013 – Dec 2015
Finisher , Bank of America Chicago Marathon	2012 and 2013
Finisher , Transamerica Chicago Triathlon	2014
Finisher , The San Francisco Marathon	2017
Mentor , National Institute on Drug Abuse Summer Research Internship Program	2017
Reviewer , Association of Chiropractic Colleges Research Agenda Conference	Sep 2010 – Present

Reviewer , Journal of Back and Musculoskeletal Rehabilitation	Sep 2010 – Present
Reviewer , Chiropractic & Manual Therapies	May 2011 – Present
Reviewer , Magnetic Resonance Insights	July 2015 – Present
Reviewer , The Organization for Human Brain Mapping Annual Meeting	Nov 2016 – Present
Reviewer , Experimental Brain Research	Apr 2017 – Present
Reviewer , Pain	Sep 2017 – Present
Reviewer , Scientific Reports	Feb 2018 – Present
Reviewer , Journal of Pain	Feb 2018 – Present
Reviewer , NeuroImage	May 2018 – Present
Reviewer , PLOS ONE	Feb 2019 – Present
Reviewer , Spinal Cord	Mar 2019 – Present
Reviewer , Pain Medicine	Jan 2020 – Present
Reviewer , BMC Medical Imaging	Nov 2020 – Present
Reviewer , Journal of Pain Research	Nov 2020 – Present
Reviewer , Neurobiology of Pain	Jun 2021 – Present
Reviewer , Neuroscientist	Apr 2022 – Present
Reviewer , Human Brain Mapping	Nov 2022 – Present
Reviewer , Movement Disorders	Dec 2022 – Present
Reviewer , Journal of Neuroscience	Dec 2022 – Present
Reviewer , Imaging Neuroscience	Aug 2023 – Present
Reviewer , Journal of Cachexia, Sarcopenia and Muscle	Oct 2024 – Present
Reviewer , Department of Veterans Affairs, SCI/D and Pain Panel	Feb 2021
Associate Editor , Pain Medicine	Feb 2020 – Nov 2022
Co-Section Editor , Psychology, Psychiatry & Brain Neuroscience, Pain Medicine	Nov 2022 – Present
Topic Editor , Frontiers in Integrative Neuroscience	Jun 2021 – Aug 2022
Invited Faculty , MGH/Martinos Center Spinal Cord Workshop	2021 and 2023
Recipient , SVSU Biology Department Outstanding Senior	May 2006
Recipient , SVSU Award for Excellence Full Tuition Academic Scholarship	Aug 2003 – May 2006
Recipient , NIH F32 Individual National Research Service Award Fellowship	Dec 2012 – Nov 2015
Recipient , American Pain Society, Young Investigator Travel Award	Mar 2018
Recipient , NIH K23 Patient-Oriented Research Career Development Award	Sep 2018 – Aug 2023
Recipient , NIH Clinical Research Extramural Loan Repayment Program Award	Jul 2018 – Jun 2022
Recipient , American Chiropractic Association, Researcher of the Year Award	2021
Ambassador , NIH Loan Repayment Program	Feb 2019 – Present
Reviewer , The Norwegian Chiropractors' Research Foundation	Oct 2022
Fellow , Chiropractic Academy for Research Leadership	2020 – 2023
Reviewer , NIH Center for Scientific Review Special Emphasis Panel	April 2023
Award , ANPT Golden Synapse Award: Most Outstanding JNPT Publication in 2023	2023

PEER REVIEWED PUBLICATIONS

Iorio OC, Wesselink EO, Rosenstein B, Naghdi N, Elliott JM, Weber II KA, Fortin M. Relationship Between Paraspinal Muscle Size, Intramuscular Fat and Strength: Comparative Insights from Fat-Water MRI and Computer-Vision Analysis in Chronic Low Back Pain and Matched Controls. (In Preparation).

Zhong YF, Dai YX, Li SP, Zhu KJ, Ran Y, Chen L, Ruan Y, Yu P, Li L, Li W, Xu CL, Sun X, Weber K, Kong DW, Yang F, Lin W, Chen J, Chen BL, Jiang H, Zhou YJ, Sheng B, Tian YZ, and Sun YL. Development and Validation of a Deep Learning Model for Automated Segmentation and Prediction of Cervical Intervertebral Disc Degeneration in Neck Pain Patients Using MRI. (In Preparation).

Wesselink EO, Goyal A, Pfyffer D, Law CSW, Kaptan M, Wang Y, Mackey S, Cohen-Adad J, Bédard S, Karthik EN, Kim B, Kogan F, De Leener B, Elliott JM, Weber II KA. Synthetic CT Improves Cross-

Domain Generalizability from MRI to CT for Automated Muscle Segmentation Networks. (In Preparation).

Wesselink EO, Elliott JM, McKay M, Yin R, Kaptan M, Goyal, A, Law CSW, Chaudhari A, Kogan F, Mackey S, Cohen-Adad J, Bédard S, De Leener B, Kim B, Nanz D, Bollman S, Sommer S, Weber II KA. MuscleMap Toolbox (MMT): An Open-Source, Contrast-Agnostic Tools for Automated Whole-Body Muscle Segmentation and 3D Quantification from MRI and CT. (In Preparation).

Law CSW, Pfyffer D, Kaptan M, Indriolo T, Weber II KA, Glover GH, Mackey S. Studying Central Pain Mechanisms in Fibromyalgia using Simultaneous Spinal Cord-Brain Functional Imaging: A Cross-Sectional Observational Study. (In Preparation).

Franettovich Smith MM, Vicenzino B, Wilkes M, Elliott JM, Weber II KA, Hurn S, Collins NJ. Smaller intrinsic foot muscle volumes in individuals with plantar heel pain compared to those without pain: An exploratory study showing muscle specific differences using ultra-high-field (7-Tesla) magnetic resonance imaging. (In Preparation).

Kong JT, Tian L, Weber II KA, Law C, Darnall B, Stafford RS, Gross JJ, Mackey S. Predicting symptom improvement in chronic low back pain treated with acupuncture vs. placebo: model development and external validation. (In Preparation).

Imbert C, Wang Y, Wager TD, Rosen A, Ashar YK, Law CSW, Gilam G, Upadhyayula PA, Zhu S, Banerjee S, Glover GH, Hastie TJ, Mackey S, Weber II KA. Predicting Cognitive Function with Multimodal Brain MRI. (In Preparation).

Atyeo J, Schnitzler M, Weber KA II, Wesselink EO, Goodzwaard-Pool A, McKay M, Nikolovski I, Goodzwaard-Pool J, Elliott JM. Developing a three-dimensional convolutional neural network for the automatic segmentation of the pelvic floor musculature. (In Preparation).

Belibia F, Goyal A, Vainberga Y, Shalita R, Wesselink EO, White MS, Gatti AA, Collins J, Weber II KA, Gold GE, Kogan F. Sex-Stratified Associations of Thigh Muscle Quantity and Quality with Knee Osteoarthritis Assessed Using Quantitative MRI. (In Preparation).

Fundaun J, Clark D, Kolski M, Dirlikov B, Heinemann AW, Tharin S, Smith AC, Crew J, Mackey S, Weber II KA. Multidimensional Chronic Pain Phenotypes After Traumatic Brain Injury Across Independent Cohorts. (In Preparation).

Molinier N, Marth AA, Reto S, Germann C, Connolly JA, Guay-Paquet M, Schilaty N, Weber II KA, Cohen-Adad J. SpineReports: Automated 3D Quantification and Reporting of Lumbar Spine Degeneration on MRI. (In Preparation).

Kim B, Wesselink EO, Gandomkar Z, McKay MJ, Elliott JM, Cass B, Young AA, Linklater JM, Moopanar TM, Borner B, Gwynne J, Weber KA. Towards a modality, plane and contrast-agnostic shoulder segmentation model via deep convolutional neural networks. (In Review).

Thornton WA, Tefertiller C, Weber II KA, Mañago M, Wiley L, Connor J, Stevens-Lapsley J, Pfyffer D, Smith AC. The predictive value of midsagittal tissue bridge width for a return to walking after spinal cord injury. (In Review).

Mei Z, Qi W, Li T, Weber II KA, Elliott JM, Sun Y, Pan H, Wang D. Segment-Specific Paraspinal Muscle Degeneration in Degenerative Lumbar Spondylolisthesis: An AI and Machine Learning Study. (In Review).

Muhammad F, Villeneuve L, Haynes G, Baha A, Smith L, Hameed S, Khan AF, Dastgir A, Weber II KA, Dobson N, Gulla S, Rohan M, Smith ZA. Dual Pathways of Cortical Reorganization in DCM: Corticospinal and Thalamostriatal Circuits. (In Review).

You DS, Troy C, Dildine TC, Lannon E, Chike O, Kim S, Weber KA, Mackey SC, Falasinnu L. Latent Classes of Pain Treatment Utilization at a Tertiary Pain Clinic: A Cross-Sectional Study. (In Review).

Bédard S, Kaptan M, Indriolo T, Law CSW, Pfyffer D, Lee L, Ratliff J, Hu S, Tharin S, Smith ZA, Glover GH, Mackey S, Cohen-Adad J, Weber II KA. Spatial distribution of spinal cord fMRI activity with electrocutaneous stimulation. (In Review).

Muhammad F, Dobson N, Stewart K, Pfyffer D, Weber KA II, Smith AC, Smith ZA. The Cervical Spinal Preservation Index (CSPI): A Composite MRI-Based Clinical Decision Tool in Degenerative Cervical Myelopathy. (In Review).

Muhammad F, Pfyffer D, Dobson N, Parrish T, Hu S, Ratliff J, Stetson N, Dhaher Y, Smith A, Weber II K, Zachary S. Tract-specific lesion damage and functional impairment in degenerative cervical myelopathy. (In Review).

Oliva V, Banerjee A, Law CSW, You DS, Falasinnu L, Wang Y, Pfyffer D, Kaptan M, Glover GH, Mackey S, Weber II KA. Brain structure and function in chronic multisite pain: a UK Biobank study with a focus on sex differences. (In Review).

Muhammad F, Pfyffer D, Parrish T, Ratliff J, Hu S, Dhaher Y, Smith A, Weber II KA, Smith ZA. Intramedullary Lesion and Perilesional Tissue Bridges Predict Motor Recovery in Degenerative Cervical Myelopathy, A Multicenter Study. (In Review).

Muhammad F, Weber II KA, Haynes G, Smith ZA. Magnetization Transfer Ratio as a Biomarker for Assessing Spinal Cord White Matter Damage Patterns Beyond the Site of Compression in Degenerative Cervical Myelopathy. (In Review).

Grondin F, Freppel S, Colman D, Weber II KA, Elliott J, Caderby T, Peyrot N. The Effects of High and Low Intensity Neck Reconditioning on Disability, Neck Muscle Volume and Fatty Infiltration: A Randomized Trial. (In Review).

de Zoete RM, Ryan MJ, Humphries M, Stanwell P, Weber II KA, Snodgrass SJ. The Relationship between Brain Morphology and Pain Intensity and Pain-Related Disability in Individuals with Chronic Idiopathic Neck Pain: A Secondary Analysis of Longitudinal Cohort Data. (In Review).

Kim B, Wesselink EO, Gandomkar Z, McKay MJ, Seitz AL, Elliott JM, Kumar AA, Cass B, Young AA, Linklater JM, Mooppanar TR, Weber II KA. Gaussian mixture modelling enables valid intramuscular fat quantification on T2- and intermediate-weighted shoulder MRI relative to two-point Dixon (In Review).

Li S, Sun Z, Hu B, Yin M, Dai Y, Kong D, Zhang Y, Liang Z, Qin Y, Weber KA, Chen H, Wang Y, Sun Y. From MRI Radiomics to Biphase Finite Element Simulation: A Patient-Specific Pipeline for Biomechanical Profiling of Lumbar Disc Degeneration. (In Review).

Rejc E, Smith Andrew, Claudia A, Weber K, Negahdar MJ, Smulligan K; Connor J, Forrest G, Bert R, Boakye M, Harkema S. Spinal cord lesion characteristics and early standing ability with and without epidural stimulation. (In Revision).

Haynes, G, Muhammad F, Weber KA, Khan AF, Hameed S, Shakin HJ, Rohan M, Ding L, Smith ZA. Task-Based Spinal fMRI using a Median Nerve Stimulation Reveals Functional Alterations in Degenerative Cervical Myelopathy. (In Revision).

Anderson SR, Gilam G, Law CS, Weber KA, Goldin PR, Wager T, Kong JT, Darnall B, Gross JJ, Mackey S. Task-Evoked Network Connectivity and Pain Regulation Success in Chronic Low Back Pain. (In Revision).

Franettovich Smith MM, Collins NJ, Mellor R, Weber II KA, Elliott J, Grimaldi A, Vicenzino B. Foot exercise plus education versus brief advice for the treatment of plantar heel pain (FEET Trial): a feasibility randomised controlled trial. (In Revision).

Haynes G, Muhammad F, Weber K, Khan A, Hameed S, Ding L, Smith Z. Involuntary Motor Threshold Stimulation Increases in Patients with Degenerative Cervical Myelopathy, IEEE EMBS 12th Annual International Conference on Neural Engineering, *In Press*.

Smith AC, Kepple J, Weber II KA, Thornton WA, Connor JR, Villines J, Tefertiller C, Park A, Berliner J, Draganich C. A bedside score predicts one-year walking recovery in AIS C spinal cord injury: a multisite cohort study, *Topics in Spinal Cord Injury Rehabilitation*, *In Press*.

Montpetit C, Vaillancourt N, Rosenstein B, Wesselink EO, Dover G, Weiss C, Papula LA, Melek A, Weber II KA, Elliott JM, Fortin M. 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 and Rehabilitation*, *In Press*.

Smith ZA, Haynes G, Bedard S, Hameed S, Khan AF, Dastgir A, Baha AB Kumar SG, Van Hal M, Mazin AT, Hu SS, Yasin D, Shakir HJ, Ratliff J, Weber II KA, Muhammad F. Multisite Spinal Cord and Canal Morphometry Reveals Age- and Sex-Linked Structural Vulnerability in Degenerative Cervical Myelopathy Outcomes, *Neurosurgery*, *In Press*.

Thornton WA, Tefertiller C, Weber II KA, Mañago M, Wiley L, Connor J, Stevens-Lapsley J, Pfyffer D, Smith AC. The predictive value of midsagittal tissue bridge width for a return to walking after spinal cord injury, *The Journal of Spinal Cord Medicine*, *In Press*.

van Amstela RN, Wesselink EO, Weidea G, Hooijmansa MT, Hancock MJ, Elliott JM, Weber II KA, Jaspersa RT, Pool-Goudzwaard AL. 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*, *In Press*.

Smulligan KL, Andrew C. Smith AC, Weber II KA, Carry P, Esopenko C, Baugh CM, Wilson JC, Howell DR. 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*, *In Press*.

Hartvigsen J, Aspinall S, Downie A, Harsted S, Jenkins H, Marchand AA, McNaughton D, Miller A, Nim C, Nyirö L, Roseen EJ, Young JJ, Weber KA, Wong J, Øverås CK, De Carvalho D, Adams J. The CARL II cohort: What we did and what came out of in, *Chiropractic and Manual Therapies*, 2026;34:13.

Karthik EN, Bédard S, Valošek J, Aigner CS, Bannier E, Bednařík J, Callot V, Combes A, Curt A, David G, Eippert F, Farner L, Fehlings MG, Freund P, Granberg T, Granziera C; RHSCIR Network Imaging Group; Horn U, Horák T, Humphreys S, Hupp M, Kerbrat A, Kinany N, Kolind S, Kudlička P,

Lebret A, Lee LE, Mainero C, Martin AR, McGrath M, Nair G, O'Grady KP, Oh J, Ouellette R, Pfender N, Pfyffer D, Pradat PF, Prat A, Pravata E, Reich DS, Ricchi I, Rotem-Kohavi N, Schading-Sassenhausen S, Seif M, Smith A, Smith SA, Sweeney G, Tam R, Traboulsee A, Treaba CA, Tsagkas C, Vavasour Z, Ville DV, Weber KA 2nd, Chandar S, Cohen-Adad J. Monitoring morphometric drift in lifelong learning segmentation of the spinal cord, *Imaging Neuroscience*, 2026;4:IMAG.a.1105.

Wesselink EO A, Coppieters MW, Elliott JM, Weber II KA, Verheijen EJA, Djuric N, Moojen W, Vleggeert-Lankamp C, Pool-Goudzwaard A. 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*, 2026;51(1):25-33.

Masnoon N, Cornwall J, Elliott JM, Glare P, Hilmer SN, McKay M, Walton DM, Weber K, Wesselink E. Muscle Composition as a Novel Prognostic Tool for Pain, Frailty, and Sarcopenia, *Clin Geriatr Med*, 2026;42(1):61-73.

Rowland B, Barth KS, Bell KM, ... Weber II KA, ... Anstrom KJ, Clauw DJ, Sowa GA, Mauck MC. 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*, 2025;26(11):758-772.

Nim C, Weber II KA, O'Neill S, Paulsen RT, Holm LC, Wesselink EO, Sun YL, Jun P, Breen A, Kawchuk GN. The relation between bulk (external) and internal measures of spinal stiffness, *Chiropractic and Manual Therapies*, *Chiropr Man Therap*, 2025;33(1):52.

Fundaun J, Oliva V, Bédard S, Wesselink E, Lynn B, Pai SA, Pfyffer D, Kaptan M, Berhe N, Ratliff J, Hu S, Smith ZA, Hastie TJ, Mackey S, McKay M, Elliott JM, Delp SL, Glover GH, Chaudhari AS, Law CSW, Smith AC, Weber II KA. Automated Computer-Vision Based Segmentation of Forearm Muscles: Clinical Associations with Hand Function, Muscle Volume, and Intramuscular Fat, *JCSM Communications*, 2025;8:e70015.

Muhammad F, Weber II KA, Haynes G, Villeneuve L, Smith L, Baha A, Hameed S, Khan AF, Dhaheer Y, Parrish T, Rohan M, Smith ZA. 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*, 2025;197:111083.

Banerjee R, Kaptan M, Tinnermann A, Khatibi A, Dabbagh A, Kündig CW, Law CSW, Pfyffer D, Lythgoe DJ, Tsivaka D, Ville DV, Eippert F, Muhammad F, Glover GH, David G, Haynes G, Haaker J, Brooks JCW, Finsterbusch J, Martucci KT, Hemmerling KJ, Mobarak-Abadi M, Hoggarth MA, Howard MA, Bright MG, Kinany N, Kowalczyk OS, Freund P, Barry RL, Mackey S, Vahdat S, Schading S, McMahon SB, Parish T, Marchand-Pauvert V, Chen Y, Smith ZA, Weber KA 2nd, Leener B, Cohen-Adad J. EPISeg: Automated segmentation of the spinal cord on echo planar images using open-access multi-center data, *Imaging Neuroscience*, 2025;3:IMAG.a.98.

Oliva V, Bédard S, Smith AC, Kaptan M, Pfyffer D, Chy B, Aufrichtig S, Berhe N, Ratliff J, Hu S, Smith ZA, Hastie TJ, Delp SL, Mackey S, Glover GH, Chaudhari AS, Law CSW, Weber II KA. Mapping Hand Function in the Brain and Spinal Cord with Simultaneous Brain-Spinal Cord Functional MRI, *Imaging Neuroscience*, 2025;3:IMAG.a.159.

Mauck MC, Barth KS, Bell KM, ... Weber II KA, ... Anstrom KJ, Clauw DJ, Sowa GA. The Design and Rationale of the Biomarkers for Evaluating Spine Treatments (BEST) Trial, *Pain Medicine*. 2025;26(9):538-553.

Bédard S, Valošek J, Oliva V, Weber KA, and Cohen-Adad J. Rootlets-based registration to the spinal cord PAM50 template, *Imaging Neuroscience*, 2025;3:IMAG.a.123.

Kim B, Gandomkar Z, Wesselink EO, Seitz AL, McKay MJ, Cass B, Young AA, Linklater JM, Szajer J, Subbiah K, Elliott JM, Weber II KA. Developing a three-dimensional convolutional neural network for automated full-volume multi-tissue segmentation of the shoulder with comparisons to Goutallier classification and partial volume muscle quality analysis, *Journal of Shoulder and Elbow Surgery*, 2025;34(9):2224-2238.

Smith AC, Morey C, Thornton WA, Connor JR, Pfyffer D, Weber II KA, Will K, Tefertiller C. 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*, 2025;48(5):920-926.

Thornton WA, Smulligan K, Weber II KA, Tefertiller C, Mañago M, Sevigny M, Wiley L, Stevens-Lapsley J, Smith AC. Lesion characteristics are associated with bowel, bladder, and overall independence following cervical spinal cord injury, *The Journal of Spinal Cord Medicine*, 2025;48(5):858-866.

You DS, Lannon E, Kim S, Dildine TC, Weber II KA, Raney E, Mackey S. Impact of Pain Self-Efficacy on Health Outcomes in High-Impact Chronic Pain: A Longitudinal Study, *Clinical Journal of Pain*, 2025;41(8):e1295.

Baker AK, Rosser MA, Park SH, Weber II KA, Martucci KT. Cross-Sectional Relationships Between Spinal Cord Gray Matter Volume and Pain in Individuals with Fibromyalgia and Opioid Use, *Scientific Reports*, *Scientific Reports*, 2025;15(1):27810.

Connor JR, Thornton WA, Weber KA, Pfyffer D, Tefertiller C, Smith AC. Reliability of SClseg automated measurement of midsagittal tissue bridges in spinal cord injuries using an external dataset, *Topics in Spinal Cord Injury Rehabilitation*, 2025;31(2):39-49.

Carmichael J, Weber II KA, Rubinstein S, Svoboda E, Bade M. Scapular Pain in Cervical Radiculopathy: A Scoping Review, *North American Spine Society Journal*, 2025;23:100619.

Enamundram NK, Valošek J, Farner L, Pfyffer D, Schading-Sassenhausen S, Lebret A, David D, Smith AC, Weber II KA, Seif M, RHSCIR Network Imaging Group, Freund P, Cohen-Adad J. SClsegV2: A Universal Tool for Segmentation of Intramedullary Lesions in Spinal Cord Injury, *International Conference on Medical Image Computing and Computer Assisted Intervention*. In: Wu S, Shabestari B, Xing L, editors. *Appl Med Artif Intell*. Cham: Springer Nature Switzerland; 2025. p. 198–209.

Labounek R, Bondy M, Amy Paulson A, Bédard S, ..., Weber II KA, ..., Xu J, Cohen-Adad J, Lenglet C, Nestrašil I. Body size interacts with the structure of the central nervous system: A multi-center in vivo human neuroimaging study, *Imaging Neuroscience*, 2025;3:imag_a_00559.

Muhammad F, Weber II KA, Bédard S, Haynes G, Smith ZA. Semiautomated Pipeline Effectively Assesses Severity and Monitor Disease Progression in Compressed Spinal Cord of Degenerative Cervical Myelopathy Patients, *Neurosurgery Practice*, 2025;6(2):e00138.

Anderson DB, Beach AJ, Chen L, Feng HJ, McKay MJ, Smith ZA, Weber II KA, Wesselink EEO, Elliott JM. What is Normal Age-Related Thigh Muscle Composition Among 45- to 84-Year-Old Adults from the UK Biobank Study, *GeroScience*, 2025;47(1):1175-1185.

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BOOK CHAPTERS

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of Pain 2025 Meeting, Chicago, IL, USA.

Kaptan M, Pfyffer D, Law CSW, Weber II KA, Glover G, Mackey S. Assessing Functional Connectivity Between Brain and Spinal Cord During Thermal Pain, poster presentation at the US Association for the Study of Pain 2025 Meeting, Chicago, IL, USA.

Law CSW, Kaptan M, Pfyffer D, Wang Y, Weber II KA, Mackey S, Glover G. Multiecho Cardiac-Gated fMRI Enhances Activation Detection in Simultaneous Brain-Spinal Cord Imaging, oral presentation at the 2025 International Society for Magnetic Resonance in Medicine Annual Meeting & Exhibition, Honolulu, HI, USA.

Oliva V, Bédard S, Smith AC, Kaptan M, Pfyffer D, Chy B, Aufrichtig S, Berhe N, Ratliff J, Hu S, Smith ZA, Hastie TJ, Delp SL, Mackey S, Glover GH, Chaudhari AS, Law CSW, Weber II KA. Mapping Hand Function in the Brain and Spinal Cord with Simultaneous Brain-Spinal Cord Functional MRI, oral presentation at the 2025 International Society for Magnetic Resonance in Medicine Annual Meeting & Exhibition, Honolulu, HI, USA.

Oliva V, Banerjee A, Law CSW, You D, Falasinnu L, Wang Y, Pfyffer D, Kaptan M, Glover GH, Mackey S, and Weber II KA. Brain Structural and Functional Alterations in Chronic Multisite Pain: A UK Biobank Study with a Focus on Sex Differences, poster presentation at the 2025 International Society for Magnetic Resonance in Medicine Annual Meeting & Exhibition, Honolulu, HI, USA.

Pfyffer D, Kaptan M, Law CSW, Weber II KA, Oliva V, Bedard S, Indriolo T, Maronesy T, Glover GH, Mackey S. Neural Correlates of Aberrant Pain Processing and Modulation in Fibromyalgia: A Simultaneous Spinal Cord-brain fMRI Study, oral presentation at the 2025 International Society for Magnetic Resonance in Medicine Annual Meeting & Exhibition, Honolulu, HI, USA.

Fundaun J, Oliva V, Bédard S, Wesselink E, Lynn B, Pai SA, Pfyffer D, Kaptan M, Berhe N, Ratliff J, Hu S, Smith ZA, Hastie TJ, Mackey S, McKay M, Elliott JM, Delp SL, Glover GH, Chaudhari AS, Law CSW, Smith AC, and Weber II KA, poster presentation at the Automated MRI-Based Quantification of Forearm Muscle Health and Associations with Hand Function, 2025 International Society for Magnetic Resonance in Medicine Annual Meeting & Exhibition, Honolulu, HI, USA.

Kaptan M, Pfyffer D, Law CSW, Weber KA, Glover G, and Mackey S. Functional Connectivity Between Brain and Spinal Cord During Noxious Heat Stimulation, oral presentation at the 2025 International Society for Magnetic Resonance in Medicine Annual Meeting & Exhibition, Honolulu, HI, USA.

Kaptan M, Banerjee R, Tinnermann A, Khatibi A, ... , Chen Y, Smith Z, Weber II KA, De Leener B, and Cohen-Adad J. EPISeg: Automatic Segmentation of Spinal Cord fMRI Data, oral presentation at the 2025 International Society for Magnetic Resonance in Medicine Annual Meeting & Exhibition, Honolulu, HI, USA (Magna Cum Laude Merit Award).

Bédard S, Valošek J, Weber II KA, Cohen-Adad J. Rootlets-Informed Registration to a spinal Cord Template: Proof-of-Concept, poster presentation at the 2025 International Society for Magnetic Resonance in Medicine Annual Meeting & Exhibition, Honolulu, HI, USA (Magna Cum Laude Merit Award).

Wesselink E, Elliott J, McKay M, De Martino E, Caplan N, Mackey S, Cohen-Adad J, Bédard S, De Leener B, Karthik EN, Law C, Fortin M, Vleggeert-Lankamp C, Di Leva A, Kim B, Hancock M, Pool-Goudzwaard A, Pevenage P, and Weber II KA. Segment-Any-Muscle: Towards an Open-Source, Contrast-Agnostic Computer-Vision Muscle Segmentation Model for MRI and CT, oral presentation at the 2025 International Society for Magnetic Resonance in Medicine Annual Meeting & Exhibition,

Honolulu, HI, USA.

Pfyffer D, Hothorn T, Smith AC, Weber II KA, Grillhoesl A, Mach O, Draganich C, Berliner JC, Tefertiller C, Leister I, Maier DD, Schwab JM, Thompson A, Curt A, Freund P. Prognostic value of tissue bridges in cervical spinal cord injury: a longitudinal, multicenter, retrospective cohort study, oral presentation at the 2025 American Spinal Injury Association's Scientific Meeting, Scottsdale, AZ, USA.

Snodgrass SJ, de Zoete R, Ryan M, Humphries M, Stanwell P, Weber K. Brain morphology in individuals with chronic idiopathic neck pain over 6 months: a magnetic resonance longitudinal cohort study, poster presentation at the Australasian Cognitive Neuroscience Conference 2024, Newcastle, Australia.

Smith AC, Pfyffer D, Weber KA, Grillhoesl A, Mach O, Draganich C, Berliner JC, Tefertiller C, Leister I, Maier D, Schwab JM, Thompson A, Curt A, Freund P. Spinal Cord Tissue Bridges Predict Short and Long Term Improvement: An International Multicenter Study, platform presentation at the American Physical Therapy Association Combined Sessions Meeting 2025, Houston, CA, USA.

Berhe N, You DS, Mackey S, Weber II KA. Investigating the Relationship between Sleep Quality, Pain, and Physical Function in People with Chronic Neck and Upper Limb Pain, poster presentation at the US Association for the Study of Pain 2024 Meeting, Seattle, WA, USA.

Raney E, Weber K, Mackey S, You DS. Low Pain Self-Efficacy as a Psychological Factor Associated with Chronic Pain, poster presentation at the US Association for the Study of Pain 2024 Meeting, Seattle, WA, USA.

Pfyffer D, Kaptan M, Law CSW, Weber II KA, Oliva V, Bédard S, Maronesy T, Glover GH, Mackey S. Corticospinal pain processing and modulation in fibromyalgia: a combined brain-cord fMRI study, poster presentation at 29th Annual Meeting of the Organization for Human Brain Mapping 2024, Seoul, South Korea.

Valosek J, Enamundram NK, Bouthillier M, Schading-Sassenhausen S, Farner L, Pfyffer D, Smith AC, Weber II KA, Freund P, and Cohen-Adad J. Automatic segmentation of T2-weighted hyperintense lesions in spinal cord injury, oral presentation at the International Society for Magnetic Resonance in Medicine 28th Annual Meeting & Exhibition 2024, Singapore.

Pfyffer D, Law CSW, Weber KA, Kaptan M, Maronesy T, Glover GH, and Mackey S. Imaging noxious thermal intensity encoding along the neuraxis using simultaneous spinal cord-brain functional magnetic resonance imaging, poster presentation at the US Association for the Study of Pain 2023 Meeting, Durham, NC, USA.

Baker A, Park SH, Weber KA, Martucci KT. Altered Dorsal and Ventral Horn Gray Matter Volumes in Long-term Opioid-using Fibromyalgia Patients, poster presentation at the US Association for the Study of Pain 2023 Meeting, Durham, NC, USA.

Pfyffer D, Law CSW, Weber KA, Kaptan M, Maronesy T, Glover GH, Mackey S. Imaging thermal intensity encoding along the neuraxis using simultaneous spinal cord-brain fMRI, submitted to 28th Annual Meeting of the Organization for Human Brain Mapping 2023, Montreal, Canada.

Kaptan M, Law C, Weber K, Pfyffer D, Maronesy T, Glover GH, Mackey S. Resting-state functional connectivity between the brain and spinal cord, submitted to 28th Annual Meeting of the Organization for Human Brain Mapping 2023, Montreal, Canada.

Smith AC, Thornton WA, Draganich C, Berliner JC, Tefertiller C, Weber II KA. A simple clinical prediction rule using S1 dermatome to predict independent walking one-year following traumatic spinal cord injury, platform presentation at the American Physical Therapy Association Combined Sessions Meeting, San Diego, CA, USA 2023.

Draganich C, Weber KA, Thornton WA, Berliner JC, Sevigny M, Charlifue S, Tefertiller C, Smith AC. Predicting outdoor walking one year after spinal cord injury: clinical prediction rule validation, platform presentation and Jayanthi Lectureship recipient at the Academy of Spinal Cord Injury Professionals 2022, Kansas City, MO.

Smith AC, Angeli CA, Ugiliweneza B, Weber KA, Negahdar M, Mesbah S, Boakye M, Harkema SJ, Rejc E. Epidural stimulation-promoted standing ability and spinal cord lesion characteristics in motor complete SCI, poster presentation and Translational Research or Human Neuroscience Studies in Spinal Cord Injury (TRoHNS) award recipient at the American Spinal Injury Association (ASIA) Annual Scientific Meeting, New Orleans LA, USA 2022.

Muhammad F, Weber KA, Haynes G, Omini M, Baha A, Paliwal M, Shakir H, Martin M, Dhaher Y, Smith ZA. Gray Matter Horn BOLD Signal: A Novel MRI Biomarker of Spinal Cord Gray Matter Injury in Degenerative Cervical Myelopathy. Society for Brain Mapping and Therapeutics. CA, March 10th-13th, 2022.

Weber II KA, Teplin ZM, Wager TD, Shah N, Law CS, Prabhakard N, Ashar YK, Gilam G, Banerjee S, Delp SL, Glover GH, Hastie TJ, and Mackey S. Confounds in Neuroimaging: A Clear Case of Sex as a Confound in Brain-Based Prediction. 27th Annual Meeting of the Organization for Human Brain Mapping 2022, Glasgow, Scotland.

Wesselink EO, Elliott JM, Coppieters MW, Hancock MJ, Cronin B, Pool-Goudzwaard A, Weber II KA. Automating the Segmentation of the Lumbar Paraspinal Muscles from T₂-Weighted MRI. CARLoquium, Virtual, 2022.

Muhammad F, Weber KA, Haynes G, Baha A, Omini M, Paliwal M, Martin M, Shakir H, Dhaher Y, and Smith ZA. Functional MRI highlights distinct cord injury due to chronic spinal cord compression in cervical myelopathy. Oklahoma's Biotech and OKC Innovation District BioTalk, USA 2022.

Pfyffer D, Smith AC, Weber II KA, Draganich C, Berliner JC, Tefertiller C, Hothorn T, Schwab JM, Curt A, and Freund P. Width of tissue bridges predicts neurologic recovery 3 months after spinal cord injury: a multi-center study. American Academy of Neurology Annual Meeting, Seattle, WA, USA, 2022.

Smith AC, O'Dell DR, Dungan D, Thaker A, Gisbert R, Weber KA, Berliner JC, and Albin SR. Spinal cord tissue bridges validation study: predictive relationships with sensory scores following spinal cord injury. Academy of Neurologic Physical Therapy Annual Conference, Virtual, USA 2021.

Franettovich Smith MM, Collins NJ, Mellor R, Grimaldi A, Elliott J, Hoggarth M, Weber II KA, Setchell J, Binte Mohamed Amran NN, and Vicenzino B. Feasibility, credibility and acceptability of foot exercise plus education versus wait-and-see for a randomised clinical trial for plantar heel pain. Australian Physiotherapy Association Conference 2021.

Hoggarth MA, Wang MC, Hemmerling KJ, Smith ZA, Weber II KA, and Bright MG. Impact of manual segmentation on the non-linear registration of a spinal cord atlas to functional space. International Society for Magnetic Resonance in Medicine 28th Annual Meeting & Exhibition 2021.

Paliwal M, Weber K, Smith A, Elliott J, Muhammad F, Dahdaleh N, Bodurka J, and Smith Z. Fatty infiltration in cervical flexors and extensors in degenerative cervical myelopathy: using multi-muscle segmentation machine learning algorithm, podium presentation at the Congress of Neurological Surgeons Spine Summit 2021, San Diego, CA.

Paliwal M, Weber K, Muhammad F, Haynes G, Hopkins B, Dahdaleh N, Parrish T, Bodurka J, Dhafer Y, and Smith Z. Magnetization Transfer Imaging and Atlas Based Mapping of the Spinal Cord in Degenerative Cervical Myelopathy, podium presentation at the Congress of Neurological Surgeons Spine Summit 2021, San Diego, CA.

Hoggarth MA, Elliott JM, Kwasny MJ, Wasielewski M, Weber II KA, Parrish TB. Magnetization Transfer Imaging of the Spinal Cord Identifies Those with Poor Outcome after Whiplash Injury, platform presentation at the American Physical Therapy Association Combined Sessions Meeting 2021.

Smith AC, Albin SR, O'Dell DR, Berliner JC, Dungan D, Elliott JM, Weber II KA. The Axial Damage Ratio May be a Useful MRI Biomarker for Prognosis of Future Walking, American Physical Therapy Association Combined Sessions Meeting 2021.

Weber II KA, Abbott R, Bojilov V, Smith AC, Wasielewski M, Hastie TJ, Parrish TB, Mackey S, Elliott JM. Multi-Muscle Deep Learning Segmentation to Automate the Quantification of Muscle Fat Infiltration in Cervical Spine Conditions, poster presentation at the US Association for the Study of Pain 2020 Virtual Meeting.

Weber II KA, Wager TD, Upadhyayulaa PA, Law CS, Prabhakar N, Zhu S, Ashar YK, Gilam G, Banerjee S, Delp SL, Glover GH, Hastie TJ, Mackey S. Brain Strength: Multi-Modal Brain MRI Predicts Grip Strength, poster presentation at the American Neurological Association 2020 Virtual Annual Meeting.

Franettovich Smith MM, Elliott JM, Al-Najjar A, Weber KA, Hoggarth MA, Vicenzino B, Hodges PW, Collins NJ. Ultra-high-field (7 Tesla) magnetic resonance imaging of the foot: advanced neuromuscular imaging to quantify intrinsic foot muscle volume and composition, poster presentation at the International Society of Electrophysiology and Kinesiology 2020 Virtual Congress, Accepted.

Law CSW, Weber KA, Mackey S, Glover G. Simultaneous Brain/Spinal Cord fMRI reveals Subject-Level Activation Differences under Noxious Thermal Stimulus, International Society for Magnetic Resonance in Medicine 28th Annual Meeting & Exhibition 2020, Sydney, Australia.

Eva Alonso-Ortiz E, ... , Weber K, ... , Cohen-Adad J. Quantitative MRI of the spinal cord: reproducibility and normative values across 40 sites, International Society for Magnetic Resonance in Medicine 28th Annual Meeting & Exhibition 2020, Sydney, Australia.

Hoggarth MA, Elliott J, Kwasny M, Wasielewski M, Weber K, and Parrish B. Is recovery from whiplash influenced by macromolecular changes in spinal cord white matter?, International Society for Magnetic Resonance in Medicine 28th Annual Meeting & Exhibition 2020, Sydney, Australia.

Weber KA II, Wager TD, Elliott JM, Mackey S, Liu WC, Sparks CL. Decreased Neurologic Pain Signature Activation Following Thoracic Spinal Manipulation in Healthy Volunteers and Participants with Neck Pain, platform presentation at the 2020 Association of Chiropractic Colleges Research Agenda Conference, San Diego, CA.

O' Dell DR, Albin SR, Weber KA, Berliner JC, Sevigny M, Dungan D, Abdie DR, Anderson JS, Rich AA, Seib CA, Skadow HG, Elliott JM, Smith AC. Can Early MRI Measures Predict Who Will Walk

Outside One Year after Spinal Cord Injury?, platform presentation at the American Physical Therapy Association Combined Sessions Meeting 2020, Denver, CO, USA.

Smith AC, Weber II KA, Elliott JM. Machine Learning to Automatically Measure Multifidus Muscle Fat Infiltration Following Whiplash Injury, poster presentation at the American Physical Therapy Association Combined Sessions Meeting 2020, Denver, CO, USA.

Weber II KA, Law CS, Martucci KT, Gilam G, Lewis B, Narayan S, Hastie T, Wager TD, Mackey S. Resting State Functional Connectivity Machine Learning Classification Of Chronic Back Pain, poster presentation at the National Institute of Neurological Disorders and Stroke/American Neurological Association Career Development Symposium 2019, St. Louis, MO, USA.

Hopkins B, Weber K, Kesavabhotla K, Paliwal M, Cantrell D, Smith Z. Machine Learning for the Prediction of Cervical Spondylotic Myelopathy: A Post Hoc Pilot Study of 28 Participants, Congress of Neurological Surgeons 2019, San Francisco, CA, USA.

Weber II KA, Law CS, Martucci KT, Gilam G, Lewis B, Narayan S, Hastie T, Wager TD, Mackey S. Evaluation of Resting State Functional Connectivity Classification Pipelines for Chronic Back Pain, poster presentation at the 24th Annual Meeting of the Organization for Human Brain Mapping 2019, Rome, Italy.

Law C, Weber K, Barry R, Mackey S, Glover G. Physiological Noise Correction in Simultaneous Brain and Spinal Cord fMRI, International Society for Magnetic Resonance in Medicine 27th Annual Meeting & Exhibition 2019, Montreal, Canada.

Weber II KA, Smith AC, Wasielewski M, Eghtesad K, Upadhyayula, PA, Wintermark M, Hastie TJ, Parrish TB, Mackey S, Elliott JM. Deep Learning Segmentation and Automatic Muscle Fat Infiltration Calculation of the Deep Cervical Spine Extensors: Implications for Whiplash...and Beyond, 2019 Spine Society of Australia 30th Annual Scientific Meeting, Broadbeach, Queensland, Australia.

Weber KA II, Wager TD, Elliott JM, Mackey S, Liu WC, Sparks CL. Decreased Neurologic Pain Signature Activation Following Thoracic Spine Manipulation in Healthy Volunteers, poster presentation at the American Pain Society's Annual Meeting 2019, Milwaukee, WI.

Weber II KA, Smith AC, Wasielewski M, Eghtesad K, Upadhyayula, PA, Wintermark M, Hastie TJ, Parrish TB, Mackey S, Elliott JM. Deep Learning Segmentation and Automatic Muscle Fat Infiltration Calculation of the Deep Cervical Spine Extensors: Implications for Whiplash...and Beyond, Data Blitz presentation at the American Pain Society's Annual Meeting 2019, Milwaukee, WI.

O' Dell DR, Weber KA, Berliner JC, Elliott JM, Connor JR, Cummins DP, Heller KA, Hubert JS, Kates MJ, Mendoza KR, Smith AC. Spared neural tissue is associated with ambulatory function following spinal cord injury: a magnetic resonance imaging study of midsagittal tissue bridges, American Physical Therapy Association Combined Sessions Meeting 2019, Washington, DC.

Hoggarth MA, Parrish TB, Weber II KA, Dewald JPA, Elliott JM. Motor Vehicle Crash Reconstruction and Advanced Imaging: Do Findings Relate to Whiplash Recovery?, American Physical Therapy Association Combined Sessions Meeting 2019, Washington, DC.

Hopkins, B, Weber K, Cloney M, Paliwal M, Smith ZA. Clinically Predictive Value of Gray Matter Volume Loss in Cervical Spondylotic Myelopathy (CSM): A Prospective Case-Control Study Utilizing 3T MRI and Volumetric Mapping, Cervical Spine Research Society 46th Annual Meeting 2018, Scottsdale, AZ.

Hopkins, B, Weber K, Cloney M, Paliwal M, Smith ZA. Machine Learning for the Prediction of Cervical Spondylotic Myelopathy: A Post Hoc Pilot Study of 28 Participants, Cervical Spine Research Society 46th Annual Meeting 2018, Scottsdale, AZ.

Weber II KA, Smith AC, Upadhyayula PA, Wintermark M, Hastie TJ, Elliott J, Mackey S. Segmentation of Cervical Spinal Cord Damage in Incomplete Spinal Cord Injury using Three-Dimensional T2-Weighted Magnetic Resonance Imaging and Convolutional Neural Networks: An Application of V-Net on the NiftyNet Platform, poster presentation at the Brain and Mind Centre Symposium 2018, Brisbane Australia.

Alley S, Gilbert G, Wheeler-Kingshott CG, Samson RS, Grussu F, Martin A, Banner E, Callot V, Smith SA, Xu J, Dewey B, Weber II KA, Parrish T, McLaren D, Barker GJ, Papinutto N, Seif M, Freund P, Barry RL, By S, Narayanan S, Cohen-Adad J. Consensus acquisition protocol for quantitative MRI of the cervical spinal cord at 3T, platform presentation at the Joint Annual Meeting International Society for Magnetic Resonance in Medicine - European Society for Magnetic Resonance in Medicine and Biology 2018, Paris, France.

Law CS, Weber K, Islam H, Mackey S, Glover G. Simultaneous Acquisition reveals Functional Connectivity in Brain and Spinal Cord, platform presentation at the Joint Annual Meeting International Society for Magnetic Resonance in Medicine - European Society for Magnetic Resonance in Medicine and Biology 2018, Paris, France.

Weber II KA, Upadhyayula PA, Smith AC, Hastie TJ, Mackey S. Segmentation of Spinal Cord Damage in SCI Using 3D T2-Weighted MRI and Convolutional Neural Networks, poster presentation at the 24th Annual Meeting of the Organization for Human Brain Mapping 2018, Singapore.

Hopkins, B, Weber K, Cloney M, Paliwal M, Parrish T, Smith ZA. Tract-specific volume loss on high-resolution MRI imaging predictive of cervical spondylotic myelopathy symptoms, oral podium at the The Annual Meeting of the American Association of Neurological Surgeons/Congress of Neurological Surgeons Spine Summit 2018, Orlando, FL.

Weber II KA, Sentis AI, Bernadel-Huey ON, Chen Y, Wang X, Parrish TB, Mackey S. Thermal Stimulation Alters Human Cervical Spinal Cord Functional Connectivity Compared to Rest: A Functional Magnetic Resonance Imaging Study, poster presentation at the American Pain Society's Annual Meeting 2018, Anaheim, CA.

Smith AC, Weber II KA, O'Dell DR, Parrish TB, Wasielewski M, Elliott JM. Lateral corticospinal tract damage analysis in motor incomplete spinal cord injury - its relationship to specific motor deficits, platform presentation at the American Physical Therapy Association Combined Sessions Meeting 2018, New Orleans, LA.

Abbott R, Elliott JM, Hoggarth M, O'Dell D, Smith A, Smith Z, Tappan R, Weber KA. Imaging of Spinal Trauma: Can Protons Inform Prognosis and Improve Outcomes? Education session at the American Physical Therapy Association Combined Sessions Meeting 2018, New Orleans, LA.

Cloney MB, Smith AC, Weber KA, Wu M, Coffey T, Barry A, Liu BP, Dhaher Y, Parrish TB, Lesniak MS, Smith ZA. Quantitative Magnetization Transfer MRI Measurements of the Anterior Spinal Cord Region are Associated with Clinical Outcomes in Cervical Spondylotic Myelopathy, podium presentation at the Congress of Neurological Surgeons 2017, Boston, MA.

Weber II KA, Sentis AI, Chen Y, Wang X, Parrish TB, Mackey S. Laterality of Spinal Cord Segmental

Functional Connectivity: A Resting State Spinal Cord fMRI Study, poster presentation at the 23rd Annual Meeting of the Organization for Human Brain Mapping 2017, Vancouver, Canada.

Weber II KA, Bernadel-Huey ON, Chen Y, Wang X, Parrish TB, Mackey S. Advanced Spatial Smoothing Improves Detection of Cervical Spinal Cord Activity: A Functional Magnetic Resonance Imaging Study, poster presentation at the 23rd Annual Meeting of the Organization for Human Brain Mapping 2017, Vancouver, Canada.

Weber II KA, Sentis AI, Johnson KA, Martucci KT, Mackey S. Neural correlates of response inhibition in chronic low back pain: a functional magnetic resonance imaging study, poster presentation at the American Pain Society's Annual Meeting 2017, Pittsburgh, PA.

Weber II KA, Neuroimaging-Based Brain and Spinal Cord Biomarkers for Cervical Radiculopathy, Clinical Research Sounding Board, Early Career Forum, oral presentation at the American Pain Society's Annual Meeting 2017, Pittsburgh, PA.

Sentis AI, Weber II KA, Johnson KA, Martucci KT, Mackey S. Pain processing during recalled pain differs in chronic low back pain sufferers and healthy individuals, poster presentation at the American Pain Society's Annual Meeting 2017, Pittsburgh, PA.

Suleiman L, Weber II K, Rosenthal B, Savage J, Hsu W, Parrish T, Patel A. High-Resolution Magnetization Transfer (MT) in Patients with Cervical Spondylotic Myelopathy, platform presentation at the International Society for the Advancement of Spine Surgery Annual Conference 2017, Boca Rotan, FL.

Weber II KA, Chen Y, Wang X, Kahnt T, Parrish TB, Mackey S. High-Resolution Functional Magnetic Resonance Imaging Localizes Activity to the Spinal Cord Gray Matter. Stanford Medicine, Department of Anesthesia, Perioperative and Pain Medicine, Annual Research Awards Dinner 2016, Palo Alto, CA.

Suleiman L, Weber II K, Parrish T, Savage J, Hsu W, Patel A. High-Resolution Magnetization Transfer Correlates with Cervical Stenosis in Patients with Cervical Myelopathy, American Academy of Orthopaedic Surgeons Annual Meeting 2016, Orlando, FL.

Weber II KA, Chen Y, Wang X, Kahnt T, Parrish TB. Functional Magnetic Resonance Imaging of the Spinal Cord During Thermal Stimulation, Neuroscience 2015, Chicago, IL.

Weber II KA, Chen Y, Wang X, Kahnt T, Parrish TB. Lateralization of Cervical Spinal Cord Activity During a Simple Isometric Upper Extremity Motor Task, poster presentation at the 21st Annual Meeting of the Organization for Human Brain Mapping 2015, Honolulu, HI.

Weber II KA, Chen Y, Wang X, Parrish TB. Spinal Cord and Brainstem Activity During Tactile Stimulation Across Multiple Dermatomes, poster presentation at the 21st Annual Meeting of the Organization for Human Brain Mapping 2015, Honolulu, HI.

Weber II KA, Chen Y, Parrish TB. Characterization of the Magnetization Transfer Ratio in the Healthy Cervical Spinal Cord, poster presentation at the 21st Annual Meeting of the Organization for Human Brain Mapping 2015, Honolulu, HI.

Weber II KA, Chen Y, Wang X, Kahnt T, Parrish TB. Functional Magnetic Resonance Imaging of the Spinal Cord During Thermal Stimulation Across Multiple Sessions, 10th Annual NIH Pain Consortium Symposium, Bethesda, MD.

Bitra J, Phung J, Weber II KA, Inoue N, Espinoza Orías AA, Parrish TB. Use of a Novel MRI Compatible Head-Positioning Device for the Three Dimensional Kinematic Analysis of the Cervical Spine in Axial Rotation, American Society of Neuroradiology 53rd Annual Meeting 2015, Chicago, IL.

Weber II KA, Chen Y, Wang X, Parrish TB. Choice of motion correction method affects spinal cord fMRI results, poster presentation at the 20th Annual Meeting of the Organization for Human Brain Mapping 2014, Hamburg, Germany.

Weber II KA, Chen Y, Wang X, Parrish TB. A search for an optimal neuronal marker for spinal cord fMRI, poster presentation at the International Society for Magnetic Resonance in Medicine 21st Annual Meeting & Exhibition 2013, Salt Lake City, UT.

Zhang N, Weber K. Effects of test stress on chiropractic student physical examination laboratory testing - a pilot study, platform presentation at the 2012 Association of Chiropractic Colleges Research Agenda Conference, Las Vegas, NV.

Wang X, Casadio M, Weber K, Parrish T, Mussa-Ivaldi F. White matter microstructure changes induced by motor skill learning, poster presentation at Neuroscience 2011, Society for Neuroscience Annual Meeting, Washington, DC.

Weber II KA, Wang X, Casadio M, Mussa-Ivaldi FA, Parrish TB. Does White Matter Change Following Motor Training?: A Pilot Study, poster presentation at the 17th Annual Meeting of the Organization for Human Brain Mapping 2011, Quebec City, Canada.

Weber II KA, Parrish TB, Inoue N, Espinoza Orías AA, Rogers LM, Stinear JW. Using Three-Dimensional MRI to Study the Effects of Spinal Manipulation on Cervical Kinematics *In Vivo*: Discussion and Study Protocol, poster presentation at the 2011 World Federation of Chiropractic Biennial Congress, Rio de Janeiro, Brazil.

Butler JE, Weber II KA. Research Output in Spinal Manipulative Therapy: A Profession-Based Analysis of Studies Published in 2009, platform presentation at the 2011 World Federation of Chiropractic Biennial Congress, Rio de Janeiro, Brazil.

Dishman JD, Weber II KA, Corbin RL, Burke JR. Inhibitory Mechanisms of Lumbar Spinal Manipulation: an H-reflex and F-response Study, platform presentation at the 2009 World Federation of Chiropractic Biennial Congress, Montreal, Canada.

Weber II KA, He X. Chiropractic Students and Research: Forecasting Scientific Progress, platform presentation at the 2009 Association of Chiropractic Colleges Research Agenda Conference, Las Vegas, NV.

INVITED SPEAKER/PRESENTER

From Chiropractor to Neuroscientist to Advancing Spinal Imaging with Artificial Intelligence: My Journey to My Dream, California Chiropractic Association, February 2026.

ANES 215 Current Controversies and Emerging Technologies in Applied Neuroscience, Stanford University School of Medicine, January 2026.

Planning Your First/Next Grant Application, Division of Pain Medicine T32 Career Development and Mentoring Seminar, Stanford University School of Medicine, October 2025.

Everything You Wanted to Know About fMRI Beyond Cortex: Introduction to Cervical Spinal Cord fMRI

Methods, United States Association for the Study of Pain Neuroimaging Special Interest Group Webinar, July 2025.

Decoding the Pain Puzzle: MRI in Chronic Musculoskeletal Pain: Overview of Musculoskeletal Pain & The Role of CNS in Chronic MSK Disorders, 2025 ISMRM & ISMRT Annual Meeting & Exhibition, Honolulu, HI, USA

Advancements in Quantitative MRI for Spinal Conditions, translational Social Cognitive and Affective Neuroscience (tSCAN) Lab Lecture, Institute of Biomedical and Oral Research, Hebrew University of Jerusalem, April 2025.

Will AI Impact the Chiropractic Experience?, Keynote Lecture at the Palmer College of Chiropractic Florida Homecoming, March 2025.

Mapping Sensory and Motor Function in the Spinal Cord and Brain: From Maps to Markers of Disease, Biomedical Engineering and Imaging Institute of Icahn School of Medicine at Mount Sinai, October 2024.

Imaging Markers in Chronic Spinal Injury, Oklahoma University Health Sciences Center Neuroscience Seminar, October 2024.

Mapping Sensory and Motor Function in Humans with Simultaneous Brain-Spinal Cord Functional MRI, General Electric Healthcare Distinguished Lecture at the 29th Annual Meeting of the Organization for Human Brain Mapping 2023, Seoul, South Korea.

From Images to Biomarkers: Automating the assessment of Muscle health with Magnetic resonance Imaging, Evidence-Based Practices and Chiropractic Care, Department of Veterans Affairs, Aug 2023.

Mentoring Undergraduates, Division of Pain Medicine T32 Career Development and Mentoring Seminar, Stanford University School of Medicine, June 2024.

Simultaneous Spinal Cord-Brain fMRI: Motor Processing, General Electric Healthcare Connectome Working Group Meeting, March 2024.

Short-Term and Long-Term Planning for an Academic Career, Division of Pain Medicine T32 Career Development and Mentoring Seminar, Stanford University School of Medicine, February 2024.

Podcast Interview for Discussions in Spinal Cord Injury Science (DiSCIS), Spinal Cord Injury Special Interest Group of the Academy of Neurologic Physical Therapy of the American Physical Therapy Association, July 2023.

Extracting More from MRI: Brain, Spinal Cord, and Muscular Markers of Health and Disease, Spaulding Rehabilitation Hospital, Department of Physical Medicine and Rehabilitation, Harvard University School of Medicine, Aug 2022.

Brain Imaging in Traumatic Brain Injury, Stanford Synapse: Brain Injury Support Group Annual Conference, Apr 2022.

Extracting More from MRI: From Images to Biomarkers, Lecture to Department of Physical Therapy, Swami Rama Himalayan University, Baksar Wala, India, Dec 2021.

Spinal Cord Functional Imaging: Task-Based, Spinal Cord Workshop, MGH Martinos Center for

Biomedical Imaging, Boston, MA, Nov 2021.

World of Chiropractic Web Series Interview, World Federation of Chiropractic, Sep 2021.

Extracting More from MRI: From Images to Biomarkers, Clinical Research Seminar Series, Palmer College of Chiropractic, Davenport, IA, Aug 2021.

Advanced MRI Techniques, Pain, and Manual Therapy, Chiropractic Science Podcast by Dr. Dean Smith, Jul 2020.

Moderator for International Association for the Study of Pain's Pain Research Forum Seminar, Human Spinal Cord Neuroimaging of Chronic Pain and Opioid Use, Dr. Kathryn Martucci, Duke University.

Mapping Sensory and Motor Function in the Spinal Cord & Brain: From Maps to Markers of Disease, MGH Martinos Center Brainmap Seminar, Boston, MA, USA, Oct 2019.

The Neurophysiology of Clinical Pain and Its Treatment, Science Week Series, Parker University, Dallas, TX, USA, Oct 2019.

Advancing Chiropractic with Advanced Magnetic Resonance Imaging, Palmer College of Chiropractic West, San Jose, CA, USA, Aug 2019.

Advancing Neuromuscular and Musculoskeletal Health with Advanced Magnetic Resonance Imaging, Author-in-the-Room Webinar Series, University of Sydney, Sydney, Australia, Aug 2019.

Advancing Chiropractic with Advanced Magnetic Resonance Imaging, Logan University College of Chiropractic Grand Rounds, St. Louis, MO, USA, Aug 2019.

Pain Medicine, Management, Mechanisms, and Research. Stanford Center for Clinical Research Science Series, Stanford School of Medicine, Stanford University, Palo Alto, CA Sep 2017.

Advancing Spinal Imaging: Novel Methods for Understanding Spinal Function and Structure. Center for Translational Imaging Seminar Series, Department of Radiology, Northwestern University, Chicago, IL, Nov 2014.

Advancements in MRI: Functional MRI and Diffusion Weighted Imaging with Clinical Applications. International Academy of Chiropractic Neurology, 2014 Neurology Symposium, Murfreesboro, TN.

Magnetic Resonance Imaging: MR Image Acquisition, Functional MRI, and Diffusion MRI. Biophysics Course Lecture, Department of Physical Therapy, College of Applied Health Sciences, University of Illinois Chicago, June 2014.

Functional Magnetic Resonance Imaging: Principles, Uses, and Limitations. International Academy of Chiropractic Neurology, 2011 Neurology Symposium, Chicago, IL.

Cortical Pain Processing: From Acute Pain to Chronic Pain. International Academy of Chiropractic Neurology, 2011 Neurology Symposium, Chicago, IL.

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Medical College Wisconsin, Milwaukee, WI, USA

Casper Nim, MS, PhD
What determines a positive outcome of spinal manipulation for persistent low back pain: stiffness or pain sensitivity?"
University of Southern Denmark, Odense, Denmark
2021

Mark Hoggarth, DPT, PhD
Magnetization Transfer Imaging of Spinal Cord Trauma after Whiplash Injury
PhD, Physical Therapy and Human Movement Sciences, Biomedical Engineering, Northwestern University, Chicago, IL
2020

Apoorva Ayyagari, MS
Understanding Noise in Spinal Cord BOLD fMRI Data with a Breath-hold Paradigm to Investigate Feasibility of Studying Vascular Reactivity
MS, Physical Therapy and Human Movement Sciences, Biomedical Engineering, Northwestern University, Chicago, IL
2020

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WORK EXPERIENCE

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Department of Anesthesiology, Perioperative and Pain Medicine, Stanford University, Palo Alto, CA

Senior Research Scientist Apr 2023 – Apr 2025
Department of Anesthesiology, Perioperative and Pain Medicine, Stanford University, Palo Alto, CA

Instructor Dec 2018 – Mar 2023
Department of Anesthesiology, Perioperative and Pain Medicine, Stanford University, Palo Alto, CA

Postdoctoral Scholar Jan 2016 – Dec 2018
Department of Anesthesiology, Perioperative and Pain Medicine, Stanford University, Palo Alto, CA

PhD Candidate Sep 2012 – Dec 2015
Department of Radiology, Interdepartmental Neuroscience Program, Northwestern University, Chicago, IL

PhD Graduate Student Department of Radiology, Interdepartmental Neuroscience Program, Northwestern University, Chicago, IL	Sep 2010 – Sep 2012
Initial Clinical Reviewer CID Management, Westlake Village, CA	Apr 2011 – Nov 2015
Research Assistant for Motor Behavior Laboratory Occupational Therapy Department, Rush University Medical Center, Chicago, IL	Jan 2011 – Dec 2015
Teaching Assistant Gross Anatomy Physical Therapy and Human Movement Sciences, Northwestern University, Chicago, IL	Sep 2011 – Apr 2012
Research Assistant for Neural Plasticity Laboratory Sensory Motor Performance Program, Rehabilitation Institute of Chicago, Chicago, IL	Oct 2009 – Sep 2010
Research Assistant for J. Donald Dishman, DC, MSc Palmer College of Chiropractic Florida, Port Orange, FL	Aug 2008 – Oct 2009
Laboratory Technologist Emulsion Polymer Research, The Dow Chemical Company, Midland, MI	Feb 2004 – Aug 2006
Undergraduate Student Saginaw Valley State University, University Center, MI	Aug 2003 – May 2006
Undergraduate Student Mott Community College, Flint, MI	Jan 2005 – May 2005
Undergraduate Student Delta Community College, University Center, MI	Aug 2004 – May 2005