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SELECTED OCCUPATIONAL HISTORY

Owner, LifeStyle Health & Fitness, Oakley, CA, 2006 - Present

Partner, Concussion Testing Services, California, 2021 - 2022

Director Manual and Physical Medicine, Sutter Hospital Occupational Health, Oakland , CA, 1999 - 2006

CEO, Castro Valley Medical Center, Castro Valley, CA, 1997 - 1999

Director Manual and Physical Medicine, Focused Rehab, Castro Valley, CA, 1994 - 1997

Partner, Delta Spine & Sportcare, Brentwood, CA, 1992 - 1994

Exam Doctor Rehabilitation Assistant, Dan Murphy, DC, DACBO, Pleasanton, CA, 1991 - 1993

Physical Therapy Aide, Institute for Physical Medicine, Pleasanton, CA, 1989 – 1991

EDUCATION AND LICENSURE

Doctor of Chiropractic, Licensed in the State of , License # CA22554, 1993-Present

Doctor of Chiropractic, Licensed in the State of , License # , -

Doctorate of Chiropractic, Life Chiropractic College West, Hayward, California, 1992

Internship, Life Chiropractic College, Hawyard, California,

Qualified in MRI Interpretation Review , State University of New York at Buffalo Jacobs School of Medicine in conjunction with the Cleveland University-Kansas City, Chiropractic and Health Sciences with courses recognized by the ACCME, 2022

Qualified in Evaluation and Management, State University of New York at Buffalo Jacobs School of Medicine in conjunction with the Cleveland University-Kansas City, Chiropractic and Health Sciences, Kansas City, 2022

Qualified in Spinal Trauma, State University of New York at Buffalo Jacobs School of Medicine in conjunction with the Cleveland University-Kansas City, Chiropractic and Health Sciences with courses recognized by the ACCME, 2018

Certification in Manipulation Under Anesthesia, American Academy of Manual and Physical Medicine, 1998

Certified in Industrial Injury Evaluation, International Chiropractic Association, 1997

Diplomat in Pain Management, American Academy of Pain Management, 1995

Certified in Impairment Rating, Academy of Chiropractic Post-Doctoral Division, Cleveland University - Kansas City, Chiropractic and Health Sciences Licensing Boards, 2019

Certification in Event-Related Potential (ERP) and Quantitative EEG (qEEG) Technician and Evaluation, Interpretation of ERP, qEEG, and Audiometry Data, Cognision EEG-ERP Systems, 2022

Qualified in Spinal Biomechanical Engineering, ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, 2015

Qualified in Accident Reconstruction, Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post Doctoral Division, 2017

Mini-Fellowship in Neuroradiology, Accreditation Council for Continued Medical Education in conjunction with The State University of New York at Buffalo, Jacobs School of Medicine, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University, 2023

Mini-Fellowship in Musculoskeletal Radiology, Accreditation Council for Continued Medical Education in conjunction with The State University of New York at Buffalo, Jacobs School of Medicine, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University, 2024

Fellowship Primary Spine Care in FPSC, Certified in Joint Providership from the State University of New York at Buffalo, Jacobs School of Medicine, Office of Continuing Medical Education, Cleveland University Kansas City, College of Chiropractic, and the Academy of Chiropractic, 2024

SELECTED POST-GRADUATE EDUCATION, CERTIFICATIONS AND DIPLOMATES

Fellowship Primary Spine Care, two-year program on spinal trauma, spinal management, advanced imaging, electrodiagnostics, accident engineering, spinal biomechanical engineering, triaging the injured, stroke diagnosis, demonstrative documentation, connective tissue pathology, ligament pathology diagnosis and management, and spinal treatment evidence-based outcome studies. The program requires collaboration in advanced imaging for spinal and MSK radiology and being published in case studies. Certified in Joint Providership from the State University of New York at Buffalo, Jacobs School of Medicine, Office of Continuing Medical Education, Cleveland University Kansas City, College of Chiropractic, and the Academy of Chiropractic, 2024

Mini-Fellowship Musculoskeletal Radiology, MSK Extremities, Identifying arthritis, advanced cartilage pathology, rotator cuff tears, labral tears, tendon injuries and degeneration, meniscal tears, ligamentous injuries, common fractures, sports related injury patterns, and plantar fasciitis in both upper and lower extremities. Academy of Chiropractic Post-Doctoral Division, Accreditation Council for Continued Medical Education in conjunction with The State University of New York at Buffalo, Jacobs School of Medicine, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University., 2024

Mini-Fellowship in Musculoskeletal Radiology , MSK Extremities – Clinical Research, Contemporary literature based evidence with rheumatoid, osteo, spondylar, gouty, and psoriatic arthritides, advanced cartilage pathology, rotator cuff tears, labral tears, tendon injuries and degeneration, meniscal tears, ligamentous injuries, common fractures, sports related injury patterns, and plantar fasciitis in both upper and lower extremities. Academy of Chiropractic Post-Doctoral Division, Accreditation Council for Continued Medical Education in conjunction with The State University of New York at Buffalo, Jacobs School of Medicine, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University., 2024

Primary Spine Care 14, Spinal Biomechanics in Clinical Practice, The utilization of X-Ray digitization to diagnose spinal biomechanical pathology and analyzing trends in healthcare when triaging mechanical spine pain. The role of credentials in interprofessional collaboration. ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Cleveland University Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, , 2023

Primary Spine Care 14, MRI Spine Sequence Acquisition and Interpretation, The understanding and utilization of T1, T2, STIR, Proton Density, FSE, GRE imagine sequencing for conclusive diagnosing of fracture, tumor, infection, and disc pathology. Identifying herniation, protrusion, bulge, extrusion-migrated, and extrusion-fragments on MRI images. ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Cleveland University Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2023

Primary Spine Care 14, Interprofessional Collaboration on Mechanical Back Pain in Clinical Practice, Triaging neurologically compromised cases in conjunction with positive MRI images, and collaboratively managing cases with neurosurgeons in clinical practice. Post-operative management of spinal cases through full recovery. ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Cleveland University Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2023

Primary Spine Care 14, Spinal Biomechanical Engineering Analytic, The analytics of spinal biomechanical engineering utilizing X-Ray digitizing for Alteration of Motion Segment Integrity and biomechanical pathology. Determining laxity of ligaments in connective tissue pathology and the long-term negative sequels of the pathology. ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Cleveland University Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2023

Primary Spine Care 14, Demonstrative Reporting of MRI Spinal Disc Pathology, The diagnosis, and reporting of spinal disc bulges, herniations, protrusions, extrusions, and fragments. Reporting varices, Modic 1, 2, and 3, posterior longitudinal, interspinous, and intertransverse ligament. Reporting the ligamentum Flavum and epidural fat as a space-occupying lesion. ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Cleveland University Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2023

Case Management and Documentation , Spinal Biomechanics in Clinical Practice, The utilization of X-Ray digitization to diagnose spinal biomechanical pathology and analyzing trends in healthcare when triaging mechanical spine pain. The role of credentials in interprofessional collaboration. Cleveland University Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, , 2023

Mini-Fellowship in Neuroradiology – MRI Spine – Part 1, Evidence-based studies in Modic Changes, Disc and Referred Pain, MRI and Cervical Musculature, Kinetic MRI Images, Neurological Innervation, MRI and Injury Mechanisms, Discogenic Pain, Annular Tears and Fissures, Asymptomatic Herniations. ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York,, 2023

Mini-Fellowship in Neuroradiology – MRI Spine – Part 2, Identify and oral examination of 60 MRI sequences (over 2500 images) of disc bulges, circumferential, radial, and transverse fissures, varices, and herniations inclusive of the following types: protrusion, extrusions (sequestered and migrated/comminuted extrusions). MRI sequencing for accurate interpretation with contemporary nomenclature and reporting. ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York,, 2023

Primary Spine Care 15, Advanced MRI and X-Ray Documentation in Clinical Practice, Interpreting and utilizing X-ray and MRI findings in creating demonstrative documentation. Advanced

identification of spinal disc lesions, herniations, bulges, protrusion, extrusion, and fragmentations through computer graphics. Identification and demonstrative documentation of vertebral motor unit pathology and reporting demonstratively using computer graphics. Academy of Chiropractic Post-Doctoral Division, Long Island, NY, , 2023

Primary Spine Care 15, Advanced MRI Interpretation in Clinical Practice, Utilization of thin slice acquisitions with T2 Fat suppressed, STIR, proton density, T1 and T2 sequencing for advanced identification of spinal disc lesions, herniations, bulges, protrusion, extrusion, and fragmentations. Better visualization of intradural and extradural lesions, neoplasms, and infections. Academy of Chiropractic Post-Doctoral Division, Long Island, NY,, 2023

Primary Spine Care 15, Ethics in Clinical Practice, Ethical, collaborative relationships with medical PCPs and specialists using advanced documentation and accurate reporting of imaging and advanced imaging. Creating a collegial relationship when conflicts arise in concluding accurate diagnosis to allow consensus and the evidence to determine final diagnosis. Academy of Chiropractic Post-Doctoral Division, Long Island, NY,, 2023

Primary Spine Care 15, Spinal CAT Scan Interpretation, Understanding the utilization of CAT Scan slicing and the reformatting when using bone and soft tissue windows. Correlating MRI to CAT Scan when either creates an unclear conclusion to render a complete image of the morphology of the indeterminate pathology. Understanding the physics of CAT Scan and the radiation levels with different types of CAT Scan technology. Academy of Chiropractic Post-Doctoral Division, Long Island, NY,, 2023

Primary Spine Care 15, Connective Tissue/Strain Sprain Pathology, Understanding the morphology and physiology of connective tissue at the cellular and extra-cellular levels in building a foundation to understanding the function and interaction of ligaments, tendons, muscles, and bones, Identifying connective tissue pathology and the repair process with a foundation of r permanent aberrant sequella. Academy of Chiropractic Post-Doctoral Division, Long Island, NY,, 2023

Primary Spine Care 15, Advanced Spinal Biomechanical Engineering, Understanding the concepts of normal vs. pathological movement of vertebral motor units in accurately concluding diagnosis on biomechanical pathology when considering excessive motion. An evidence-based approach to determining translation, angular deviation and rotations beyond pathobiomechanical limitations in the spine. Academy of Chiropractic Post-Doctoral Division, Long Island, NY,, 2023

Primary Spine Care 15, ; Trends in Spinal Care, An evidence-based approach to concluding accurate diagnosis, prognosis, and treatment plan, Eradicating the non-specific back pain dogma

utilizing X-ray digitizing based on literature standards, Creating treatment plans with identifying the primary spinal lesions using evidence-based tools. Academy of Chiropractic Post-Doctoral Division, Long Island, NY,, 2023

Primary Spine Care 15, Documentation in Clinical Practice, Understanding and including all historical elements; current history, past history, family history, and social history when documenting a 99201, 99202, 99203, 99204, and 99205. The application of time as the prime element as per Medicode in coding examinations and re-examination with face to face, review of records and the time necessary to document in an electronic health record. Academy of Chiropractic Post-Doctoral Division, Long Island, NY,, 2023

Spinal Tumor MRI Interpretation, Diagnosing and documenting: Ependymoma, Astrocytoma, Hemangioblastoma, Lipoma, Meningioma, Neurofibroma, Schwannoma, Myxopapillary Ependymoma. Cleveland University Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, , 2022

Non-Specific Spine Pain, Chiropractic and Outcomes, Analyzing neuro-biomechanical pathological lesions defines primary spinal lesions and removes the dogma of non-specific back pain. Creating evidence-based demonstrative documentation in the creation of treatment plans. Cleveland University Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, , 2022

Primary Spine Care 13, Demonstrative Documentation Requirements, Analyzing the requirements in anatomical diagnostic imagery to communicate spinal pathology. Integrating technology, clinical findings, and advanced graphic tools to communicate a diagnostic conclusion. Cleveland University Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, , 2022

MRI Spine Advanced Clinical Case Grand Rounds, Clinical case review of MRI including intra and extra-dural findings inclusive of the disc and vascular anatomical lesions. Differentially diagnosing central cord lesions, and spinal cord vascular lesions in both acute trauma and degenerative presentations. Cleveland University Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, , 2022

MRI Spine Clinical Grand Rounds, Interpretation sequencing of STIR, T1, T2, Axial and Sagittal acquisitions. Landmarks, physics, and literature-based definitions of disc and osseous pathology, Visualizing, diagnosing, and documenting cervical and lumbar anatomy vs. pathology. Academy of Chiropractic Post-Doctoral Division, Accreditation Council for Continued Medical Education in conjunction with The State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Cleveland University - Kansas City, Long Island, NY, 2022

MRI Spine Clinical Grand Rounds, Visualizing, diagnosing, and documenting lumbar spine sequencing, disc herniations, neural canals, cauda equina, conus medullaris, nerve sleeves, canal stenosis grading, and vertebral width vs. height in determining segmental remodeling. Diagnosing thecal sac abutment, central canal root compression and ligamentum flava involvement. Academy of Chiropractic Post-Doctoral Division, Accreditation Council for Continued Medical Education in conjunction with The State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Cleveland University - Kansas City, Long Island, NY, 2022

MRI Spine Clinical Grand Rounds, Case study visualizing, diagnosing, and documenting cervical spine sequencing, disc herniations, neural canals, cauda equina, conus medullaris, and vertebral width vs. height in determining segmental remodeling. Identifying the Pons, Occipital junction, and spinal cord to identify Chiari 1 malformations. Academy of Chiropractic Post-Doctoral Division, Accreditation Council for Continued Medical Education in conjunction with The State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Cleveland University - Kansas City, Long Island, NY, 2022

MRI Spine Clinical Grand Rounds, Visualizing, diagnosing, and documenting lumbar spine sequencing, disc extrusion type herniations, neural canals, cauda equina, conus medullaris, spondylolisthesis, degenerative spondylolisthesis, disc degeneration, neural canal and central root compressions, central canal stenosis. Varices vs. herniations, and multiple level disc pathology with biomechanical failures. Academy of Chiropractic Post-Doctoral Division, Accreditation Council for Continued Medical Education in conjunction with The State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Cleveland University - Kansas City, Long Island, NY, 2022

MRI Spine Clinical Grand Rounds, Visualizing, diagnosing, and documenting cervical spine sequencing, disc extrusion type herniations, neural canals, disc degeneration, thecal sac compression, central canal stenosis, cord displacement, reversal of cervical curve, Chiari 1 malformation. Identifying spinal biomechanical failure in MRI sequencing, with visualizing ligamentous pathology as cause for failure. Differentially diagnosing recent vs. older trauma based upon edematous signal in T1, T2, and STIR images. Academy of Chiropractic Post-Doctoral Division, Accreditation Council for Continued Medical Education in conjunction with The State University of

New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Cleveland University - Kansas City, Long Island, NY,, 2022

MRI Spine Clinical Grand Rounds, Visualizing, diagnosing, and documenting cervical spine sequencing, multiple disc extrusion type herniations, vertebral remodeling, intradural tumor displacing the spinal cord visualized in T1, T2, and STIR sequences, neural canal stenosis, disc degeneration, thecal sac compression, central canal stenosis, cord displacement, reversal of cervical curve, Chiari 1 malformation, and identifying of inferior brain structures. Academy of Chiropractic Post-Doctoral Division, Accreditation Council for Continued Medical Education in conjunction with The State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Cleveland University - Kansas City, Long Island, NY, , 2022

MRI Spine Clinical Grand Rounds, Visualizing, diagnosing, and documenting 1) improper sequence acquisitions invalidating interpretation 2) incomplete study invalidating interpretation 3) visualizing, diagnosing, and documenting lumbar spine sequencing, multiple disc extrusion type herniations, vertebral remodeling, multiple thecal sac compressions, neural canal stenosis, disc osteophyte/ridging complex, central canal stenosis, spondylolisthesis. Identifying the spleen, liver, kidneys, inferior vena cava, and psoas musculature on imaging. Academy of Chiropractic Post-Doctoral Division, Accreditation Council for Continued Medical Education in conjunction with The State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Cleveland University - Kansas City, Long Island, NY, , 2022

MRI Spine Clinical Grand Rounds, Visualizing, diagnosing, and documenting cervical spine sequencing, cervical spondylosis, pathological spinal biomechanics, reversal of lordotic curve, and vertebral width vs. height in determining segmental remodeling, central herniation, thecal sac compression of the cord, identifying tongue, epiglottis, hyoid cartilage, pharynx, thyroid. Reviewing fat saturation sequences for osseous metastatic tumors and advanced degeneration. Academy of Chiropractic Post-Doctoral Division, Accreditation Council for Continued Medical Education in conjunction with The State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Cleveland University - Kansas City, Long Island, NY, , 2022

MRI Spine Clinical Grand Rounds, Visualizing, diagnosing, and documenting lumbar spine sequencing, degenerative disc disease, nerve root sleeve abutment, far lateral herniations vs. bulges, normal vs. dissected inferior vena cava aneurism, epidural fat as a space occupying lesion, facet arthropathy and edema, hypertrophy of ligamentum flava, and pseudo disc at the S1-S2 level. Academy of Chiropractic Post-Doctoral Division, Accreditation Council for Continued Medical Education in conjunction with The State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Cleveland University - Kansas City, Long Island, NY, , 2022

MRI Spine Clinical Grand Rounds, Visualizing, diagnosing, and documenting cervical spine sequencing utilizing T1 weighted images for pathology, inclusive of advanced degeneration and tumor detection. STIR in a fat saturated image for ligamentous pathology inclusive of the posterior longitudinal, ligamentous flava and interspinal ligaments. Normal clivus and odontoid for cerebellar tonsil location. Cerebral spinal fluid (CSF) flow and the utilization of the spinal cord's central canal for CSF transport. Academy of Chiropractic Post-Doctoral Division, Accreditation Council for Continued Medical Education in conjunction with The State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Cleveland University - Kansas City, Long Island, NY, , 2022

Primary Spine Care 10, Trends in Spinal Healthcare, Analyzing spinal healthcare trends in both utilization and necessity and understanding the marketplace and how a level of clinical excellence is reflected in a doctors' documentation and credentials. Treatment pathways in triaging spinal pathobiomechanics, Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY,, 2022

Primary Spine Care 10, MRI Spine Interpretation, An evidence-based understanding of time-related etiology of disc pathology considering the American Society of Neuroradiology's designation of protrusion, extrusion, and sequestration of spinal discs, Considering the signal intensity of discs in age-dating pathology and acquisition protocols for advanced spinal imaging. Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY,, 2022

Primary Spine Care 10, Spinal Biomechanics; A Literature Perspective, An evidenced-based model for spinal biomechanical engineering and pathobiomechanics considering the pathophysiological limits in translations, angular deviation, and rotational planes. Utilizing the Cartesian system in plotting vertebral points to demonstratively conclude an accurate diagnosis, prognosis and biomechanical treatment plan with the consideration of long-term care in the non-specific mechanical spine pain patient when necessary. Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY,, 2022

Primary Spine Care 10, Case Management of Mechanical Spine Pathology, Clinical Grand Rounds of herniated, protruded, extruded, sequestered, and bulging discs. Differentially diagnosing vascular vs. mechanical spinal lesions and the necessity for urgent vascular, neurological intervention, Collaborating in a team environment utilizing a neuroradiologist, electrophysiologist, and neurosurgeon with the chiropractor as the primary spine care provider. Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY,, 2022

MRI Interpretation Review Qualified, MRI Spine Interpretation Basics: Overview of MRI Spine Language, interpreting MRI spine images, Extremities MRI & X-Ray Interpretation: Interpret all

extremities in the body, MRI Clinical Grand Rounds: Multiple cases on spine and review protocols, Case Management, Spinal MRI and Documentation: Multiple cases on spine and review protocols, Primary Spine Care #12: Correlating imaging, spinal biomechanics and triage, Spinal Disc and Ligament Neurology and Pathology: Connective tissue physiology and pathology and Spinal Trauma Pathology: Managing the spinal trauma case. Cleveland University-Kansas City, Chiropractic and Health Sciences with courses recognized by the ACCGME in conjunction with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences. Qualification approved by the American Chiropractic College of Radiology (ACCR) and the American Chiropractic Board of Ra, 2022

2022 Trends in Spinal Healthcare, Analyzing evidenced-based spinal healthcare trends in both utilization and necessity and understanding the marketplace. The use of evidenced-based demonstrative documentation in reporting treatment pathways in triaging spinal pathobiomechanics. Academy of Chiropractic Post-Doctoral Division, Cleveland University-Kansas City, Long Island, NY, , 2022

MRI Spine Clinical Case Grand Rounds,, Clinical case review of MRI's including sagittal, axial, T1, T2, STIR, and proton density sequences. Identified will be the vertebrae, spinal cord, discs, nerve roots, thecal sac, posterior longitudinal ligament, epidural veins, and fat saturation pulses. Pathology will include bulges, herniations, protrusions, extrusions, myelomalacia, cord edema, and Schmorl's nodes. Learn how to collaborate effectively with radiologists, neuroradiologists, and neurosurgeons on the clinical findings. Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY,, 2022

Chiropractic vs. Physical Therapy vs. Medical Case Management and Outcomes,, Analysing evidence-based outcomes in triaging non-anatomical lesions. The analysis of neuro-biomechanical pathological lesions defines primary spinal lesions and removes the dogma of non-specific back pain. Managing collaborative relationships with medical primary providers and specialists in clinical practice. Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY,, 2022

Demonstrative Narrative and Evaluation and Management Report Writing, , Effectively creating demonstrative medical-legal documentation and meeting the needs of the courts, and making your "4-Corner" (narrative) report to build your reputation as an evidence-based provider. The step-by-step minutiae of building a report, accomplishing report writing timely and effectively by understanding the regulatory and administrative rules. Learn how to educate the lawyer on bodily injury through evidence-based demonstrative reporting. Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY,, 2022

Ligament/Connective Tissue Physiology and Pathology, , Master-Class in ligaments; anatomy, physiology, vascularization, neurological innervation, tissue repair and how they all relate to clinical practice. Ligament pathology correlating to the mechanisms of patho-neuro-biomechanical lesions (vertebral subluxation complex). Also, how ligaments play a critical role in the chiropractic spinal adjustment and in defining the chiropractic spinal adjustment mechanisms. Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY,, 2022

Stroke Evaluation and Risk Factors in the Chiropractic Practice, , Diagnosing, triaging, and documenting headaches, migraines, and vascular incidents (stroke) in the primary provider's office. Imaging protocols based upon history and clinical presentation will be presented, along with analyzing imaging findings in determining the etiology. There will be an extensive question and answer session following the instructional presentation. Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY,, 2022

Age-Dating Herniated Discs and Trauma, , Age dating herniated discs and trauma is a critical skill for an expert in spine. It combines the clinical skills of interpreting X-ray, MRI, and other imaging modalities with a clinician's understanding of joint pathology. This level of expertise is critical when collaborated with other physicians or working in the medical-legal environment as an expert. Age dating pathology is also central to creating a prognosis on your patient's recovery and must be evidence-based in rationale. Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY,, 2022

Clinical Grand Rounds in Spinal Biomechanics, , Case reviews utilizing E/M, MRI, and x-ray mensuration report to conclude an accurate diagnosis, prognosis, and treatment plan. Common diagnosis requiring interprofessional collaboration with a discussion of diagnostic dilemmas and proper communication methods. Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY,, 2022

Neurosurgical Grand Rounds, , A clinical discussion of collaborating with neurosurgeons on spinal cord and spinal nerve root co-morbidities. Triaging cases with herniated, protruded, extruded, fragments discs and differentially diagnosing tethered cord, syringomyelia, traumatic Schmorl's Nodes, Myelomalacia, spinal cord edema, vacuum disc and other intra, and extra-dural lesions. Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY,, 2022

Primary Spine Care Qualified, , This qualification includes graduate chiropractic education in healthy and traumatically altered spinal morphology inclusive of osseous, connective tissue and neurological structure, function and pathology. This certifies you are qualified in assessing predictive models in spinal biomechanics and devising engineering paradigms for treatment plans

to maximize spinal homeostasis in an evidenced based conclusion. In addition, this qualification acknowledges your expertise in triaging the injured and coordinating collaborative care from the trauma through conclusion of rehabilitation, Academy of Chiropractic Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island NY, , 2022

MRI Interpretation Review Qualified,, Recognized by Cleveland University-Kansas City, Chiropractic and Health Sciences with courses recognized by the ACCGME in conjunction with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences. Qualification language approved by the American Chiropractic College of Radiology (ACCR) and the American Chiropractic Board of Radiology (ACBR) Cleveland University-Kansas City, 2022

Evaluation & Management, , Qualified Cleveland University-Kansas City, 2022

Neurology of Ligament Pathology Module 1, Normal Morphology and Tissue Damage, Connective tissue morphology, embryology and wound repair as sequelae to trauma. Full components of strain-sprain models and permanency implications with wound repair and osseous aberration with aberrant structural integrity. Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, , 2022

Neurology of Ligament Pathology Module 2, Spinal Biomechanics and Disc Pathology, Disc pathology as sequella to trauma; herniation, extrusion, protrusion, sequestration and how the spinal unit as one system creates homeostasis to balance the pathology. Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY,, 2022

Neurology of Ligament Pathology Module 3, Neurological Innervation, The peripheral and central innervation of the disc and spinal ligaments of the dorsal root ganglion, spinal thalamic tracts, periaqueductal gray areas innervating the Thalamus and multiple regions of the brain. The efferent neurological distribution to disparate areas of the spine to create homeostatis until tetanus ensues creating osseous changes under the effect of Wolff's Law. Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY,, 2022

Demonstrative Narrative and Evaluation and Management Report Writing, Clinical record-keeping, why write clinical notes, the importance of context, what to include in a clinical note, tips for better clinical documentation, basic legal considerations, open clinical notes, how to keep documentation efficient. Cleveland University Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, , 2022

Age-Dating Ligament/Connective Tissue Physiology and Pathology, Utilizing pain patterns, the high signal in the annulus, high signal outside the annulus, Modic changes, disc height, vacuum disc, sclerosis, Phirrmann rating, facet edema, and previous MRIs to determine the chronicity of pathology., Master-Class in ligaments; anatomy, physiology, vascularization, neurological innervation, tissue repair, and how they all relate to clinical practice. Ligament pathology correlating to the mechanisms of patho-neuro-biomechanical lesions (vertebral subluxation complex). Also, how ligaments play a critical role in the chiropractic spinal adjustment and in defining the chiropractic spinal adjustment mechanisms. Cleveland University Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, , 2022

Clinical Grand Rounds in Biomechanics, Digitizing, and Advanced Imaging, Case reviews concluding and accurate diagnosis, prognosis, and treatment plan utilizing evidence-based instrumentation and algorithms. Using demonstrative reporting of case findings to collaborate with co-treating physicians. Cleveland University Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY,, 2022

Medical-Legal Documentation, A documentation discussion on meeting the requirements of the courts, carriers, and licensure boards in complete and accurate reporting. Ensuring the diagnosis, prognosis, and treatment plan are demonstratively documented. Cleveland University Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, , 2022

Certification of Training: Event-Related Potential (ERP) and Quantitative EEG (qEEG) Testing Using the COGNISION® System , Evaluation and Interpretation of ERP, qEEG, and Audiometry Data, neurophysiology of ERP/qEEG biomarkers, identifying the ERP/qEEG features from test data, evaluating and interpreting of patient reports, summarizing study findings from clinical data with over-reading by qualified Cognision experts. COGNISION® Systems, 2022

Event-Related Potential (ERP) and Quantitative EEG (qEEG) Testing Using the COGNISION® System, Using the COGNISION® software to order the COGNISION® test; applying the electrode harness and earphones properly, administering a COGNISION® test under standard clinical conditions, monitoring the ongoing test, Uploading the data upon test completion, Reviewing the data quality with Cognision electrophysiology experts and proper care and maintenance of the testing apparatus. Evaluation and Interpretation of ERP, qEEG, and Audiometry Data; Neurophysiology of ERP/qEEG biomarkers, Identifying the ERP/qEEG features from test data, Evaluating and interpreting

of patient reports, Summarizing study findings from clinical data with over-reading by qualified Cognition experts. Cognition, 2022

Evaluation and Management, Module 1:, An overview of the evaluation and management process inclusive of utilizing electronic medical records to conclude evidenced-based conclusions with the utilization of macros. The importance of adhering to an academic standard and considering co-morbidities. PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY., 2022

Evaluation and Management, Module 2:, Concluding a chief complaint, history and what needs to be considered in a physical examination. This covers in dept the required elements for chief complain, history of present illness, review of systems, and past, family, and/or social history. This module also covers the following components of a physical examination: observation, palpation, percussion, and auscultation. PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY., 2022

Evaluation and Management, Module 3:, Coding and Spinal Examination: Detailing 99202-99205 and 99212-99215 inclusive of required elements for compliant billing. It reviews the elements for an extensive review of systems, cervical and lumbar anatomy and basic testing. The course also covers the basics of vertebra-basilar circulation orthopedic assessment. PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY., 2022

Evaluation and Management, Module 4:, Neurological Evaluation: Reviewing complete motor and sensory evaluation inclusive of reflex arcs with an explanation of Wexler Scales in both the upper and lower extremities. The course breaks down testing for upper and lower motor neuron lesions along with upper and lower extremity motor and sensory testing examinations. PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY., 2022

Evaluation and Management, Module 5:, Documenting Visit Encounters: Forensically detailing the S.O.A.P. note process for visit encounters and discussing the necessity for clinically correlating symptoms, clinical findings and diagnosis with the area(s) treated. It also details how to modify treatment plans, diagnosis, document collaborative care and introduce test findings between evaluations. PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY., 2022

Evaluation and Management, Module 6:, Case Management and Treatment Orders: This module discusses how to document a clinically determined treatment plan inclusive of both manual and adjunctive therapies. It discusses how to document both short-term and long-term goals as well as referring out for collaborative care and/or diagnostic testing. It also includes how to prognose your patient and determine when MMI (Maximum Medical Improvement) has been attained. PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY., 2022

Concussion and Traumatic Brain Injury Module 1:, Traumatic Brain Injury and Concussion
Overview: This section is an in-depth overview of traumatic brain injury in concussion. It discusses that all brain injuries are traumatic and dispels the myth of a “mild traumatic brain injury.” Also, this covers triage protocols and the potential sequela of patients with traumatic brain injuries. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences ACCME Joint Providership with Cleveland University - Kansas City, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY,, 2022

Concussion and Traumatic Brain Injury Module 2:, Head Trauma and Traumatic Brain Injury Part 1:
This section discusses gross traumatic brain injuries from trauma and significant bleeding with both epidural and subdural hematomas. There are numerous case studies reviewed inclusive of neurosurgical intervention and postsurgical outcomes. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences ACCME Joint Providership with Cleveland University - Kansas City, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY,, 2022

Concussion and Traumatic Brain Injury Module 3:, Head Trauma and Traumatic Brain Injury Part 2:
This section continues with multiple case studies of gross traumatic brain injuries from trauma requiring neurosurgical intervention and also discusses recovery sequela based upon the significance of brain trauma. This module also concludes with concussion protocols in traumatic brain injury short of demonstrable bleeding on advanced imaging. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences ACCME Joint Providership with Cleveland University - Kansas City, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY,, 2022

Concussion and Traumatic Brain Injury Module 4:, Concussion And Electroencephalogram Testing:
This this section covers concussion etiology and cognitive sequela where gross bleeding has not been identified on advanced imaging. It discusses the significance of electroencephalogram testing in determining brain function and pathology (if present). This module also covers the understanding of waveforms in electroencephalogram testing in both normal and abnormal scenarios. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences ACCME Joint Providership with Cleveland University - Kansas City, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY,, 2022

Concussion and Traumatic Brain Injury Module 5:, Concussion And Electroencephalogram Testing Pathological Results: This module covers amplitude, conduction and conduction delays as sequela to traumatic brain injury to diagnose concussion and traumatic brain injury in the absence of gross bleeding and advanced imaging. This section covers electroencephalograms and event-related potentials which measures the brain response that is a direct result of specific sensory or motor events. It is a stereotype electrophysiological response to a stimulus and provides a noninvasive means of evaluating brain function. In this module multiple case studies are discussed with ensuing triage protocols pending the results. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences ACCME Joint Providership with Cleveland University - Kansas City, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY,, 2022

Primary Spine Care 11, Trends in Spinal Healthcare, Analyzing spinal healthcare trends in both utilization and necessity and understanding the marketplace and how a clinical excellence level is reflected in a doctors' documentation and credentials. Treatment pathways in triaging spinal pathobiomechanics. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences ACCME Joint Providership with Cleveland University - Kansas City, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY,, 2022

Primary Spine Care 11, MRI Spine Interpretation Advanced Diagnosis, An evidence-based understanding of time-related etiology of disc pathology considering the American Society of Neuroradiology's designation of protrusion, extrusion, and sequestration of spinal discs, T1, T2, STIR and Proton-Density weighted evaluation to diagnose spine form MRI accurately. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences ACCME Joint Providership with Cleveland University - Kansas City, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY,, 2022

Primary Spine Care 11, Spinal Biomechanical Engineering Analytics and Case Management, Utilizing spinal mensurating algorithms to conclude a pathobiomechanical vs. normal spine in the absence of anatomical pathology. Clinically correlating a history and physical examination findings to x-ray biomechanical results in creating an accurate diagnosis, prognosis, and treatment plan. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences ACCME Joint Providership with Cleveland University - Kansas City, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY,, 2022

Primary Spine Care 11, MSK Extremity Radiological Interpretation, Utilizing both MRI and x-ray to diagnose 1) Arthritis - Inflammatory and Degenerative, 2) Advanced cartilage assessment, 3) Rotator Cuff Tears, 4) Labral tears (shoulder and hip), 5) Tendon injuries and degeneration, 6) Meniscal tears, 7) Ligamentous injuries, 8) Common fractures, 9) Sports-related injury patterns, 10)

Plantar fasciitis. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences ACCME Joint Providership with Cleveland University - Kansas City, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY,, 2022

Primary Spine Care 11, Demonstrative Medical-Legal Documentation, The narrative report. How to effectively create medical-legal documentation and what the courts look for. Making your "4-Corner" (narrative) report demonstrable and build a reputation as an evidence-based provider. The step-by-step minutiae of building a report. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences ACCME Joint Providership with Cleveland University - Kansas City, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY,, 2022

Primary Spine Care 11, Managing Non-Anatomical Spine Pain, Treatment modalities centered upon "best-outcomes" in an evidence-based model considering chiropractic vs. physical therapy and chiropractic vs. medicine. Considerations of disability, pain reduction, functional improvement, drugs utilized, and side-effects are all considered. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences ACCME Joint Providership with Cleveland University - Kansas City, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY,, 2022

Extremity MRI & Xray Interpretation of the Shoulder, Identifying normal anatomy on both MRI and x-ray, inclusive of osseous, connective tissue, and neurological structures. Identifying fractures in the adult and pediatric cases. Differentially diagnosing various arthritic etiologies of osseous derangement. Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY., 2021

Extremity MRI & Xray Interpretation of the Shoulder, Identifying fractures in the adult and pediatric cases. Differentially diagnosing various arthritic changes vs. benign and metastatic Tumors. Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY., 2021

Extremity MRI & Xray Interpretation of the Elbow, Identifying normal anatomy on both MRI and x-ray, inclusive of osseous, connective tissue, and neurological structures, identifying fractures in the adult and pediatric cases. Differentially diagnosing various arthritic etiologies of osseous derangement. Differentially diagnosing various arthritic changes vs. benign and metastatic Tumors. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY., 2021

Extremity MRI & Xray Interpretation of the Wrist, Identifying normal anatomy on both MRI and x-ray, inclusive of osseous, connective tissue, and neurological structures, identifying fractures in the

adult and pediatric cases. Differentially diagnosing various arthritic etiologies of osseous derangement. Differentially diagnosing various arthritic changes vs. benign and metastatic Tumors. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY., 2021

Extremity MRI & Xray Interpretation of the Hand, Identifying normal anatomy on both MRI and x-ray, inclusive of osseous, connective tissue, and neurological structures, identifying fractures in the adult and pediatric cases. Differentially diagnosing various arthritic etiologies of osseous derangement. Differentially diagnosing various arthritic changes vs. benign and metastatic Tumors. Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY., 2021

Extremity MRI & Xray Interpretation of the Hip, Identifying normal anatomy on both MRI and x-ray, inclusive of osseous, connective tissue, and neurological structures. Identifying fractures in the adult and pediatric cases. Differentially diagnosing various arthritic etiologies of osseous derangement. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY., 2021

Extremity MRI & Xray Interpretation of the Hip, Identifying fractures in the adult and pediatric cases. Differentially diagnosing various arthritic changes vs. benign and metastatic Tumors. Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY., 2021

Extremity MRI & Xray Interpretation of the Knee, Identifying normal anatomy on both MRI and x-ray, inclusive of osseous, connective tissue, and neurological structures. Identifying fractures in the adult and pediatric cases. Differentially diagnosing various arthritic etiologies of osseous derangement. Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY., 2021

Extremity MRI & Xray Interpretation of the Knee, Identifying fractures in the adult and pediatric cases. Differentially diagnosing various arthritic changes vs. benign and metastatic Tumors. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY., 2021

Extremity MRI & Xray Interpretation of the Hand, Identifying normal anatomy on both MRI and x-ray, inclusive of osseous, connective tissue, and neurological structures, identifying fractures in the adult and pediatric cases. Differentially diagnosing various arthritic etiologies of osseous derangement. Differentially diagnosing various arthritic changes vs. benign and metastatic Tumors.

Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY., 2021

Extremity MRI & Xray Interpretation of the Foot, Identifying normal anatomy on both MRI and x-ray, inclusive of osseous, connective tissue, and neurological structures, identifying fractures in the adult and pediatric cases. Differentially diagnosing various arthritic etiologies of osseous derangement. Differentially diagnosing various arthritic changes vs. benign and metastatic Tumors. Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY., 2021

Clinical Evaluation & Screening for Traumatic Brain Injury (Part 1) , Huma Haidler, MD., Recognition and Screening of Concussion Injuries, Treatment Considerations, mTBI (mild) vs TBI (moderate/severe) California Chiropractic Association, 2021

Clinical Evaluation & Screening for Traumatic Brain Injury (Part 2) , Huma Haidler, MD., Recognition and Screening of Concussion Injuries, Treatment Considerations, mTBI (mild) vs TBI (moderate/severe) California Chiropractic Association, 2021

Traumatic Brain Injury: Differential Diagnoses - What Else Could It Be? Yury Furman, M.D. , History, symptomology, psychological and endocrinological aspects of traumatic brain injuries. California Chiropractic Association, 2021

Documentation in Medical Collaborative Cases, Concluding an E&M report in cases involving medical primary care providers of medical specialists that have complicated case histories, significant risk factors, and inconclusive findings. Triage and management of complicated cases requiring the clinical evaluation, advanced imaging and electrodiagnostics. Academy of Chiropractic Post-Doctoral Division, Cleveland University Kansas City, Long Island, NY., 2021

MRI Spine Interpretation and Protocols, Contemporary acquisition protocols including slice thicknesses and sequences inclusive of the ordering process. Interpretation of axial, sagittal and coronal views in T1, T2 and stir views inclusive of the disc, spinal cord, extra-dural and intra-dural pathology. Academy of Chiropractic Post-Doctoral Division, Cleveland University Kansas City, Long Island, NY, 2020, 2021

Ethics and Medical Collaboration, Having referral relationships with emergency rooms, neurosurgeons, orthopedic surgeons, pain management specialists, neurologists, neuroradiologist and medical primary care providers based upon clinical dilemmas that processed after a thorough

history, examination and imaging if clinically indicated to conclude diagnostic dilemmas. Utilizing evidence-based protocols and acquisition of images and treatment pathways, collaborating with medical specialists and primaries to conclude and accurate treatment plan. Academy of Chiropractic Post-Doctoral Division, Cleveland University Kansas City, Long Island, NY., 2021

Documentation in a Medical – Legal and Insurances, Constructing and concluding an E&M (99202-99205) report that accurately reflects the history, clinical findings and management of trauma cases that concurrently meets the needs of both the carriers in the courts and ethical relationship that concurrently matches the standards of both contemporary academia requirements and a contemporary literature-based standard. Academy of Chiropractic Post-Doctoral Division, Cleveland University Kansas City, Long Island, NY., 2021

Primary Spine Care 2: Spinal Trauma Pathology, Morphology of healthy and traumatized connective tissue and the permanency implication of adhesions, spinal disc morphology in the healthy and pathological patient as sequella to trauma in relationship to bulges, herniations, protrusions, extrusions and sequestrations. Aberrant spinal biomechanics and negative sequella to trauma. Academy of Chiropractic Post-Doctoral Division, Cleveland University Kansas City, Long Island, NY., 2021

Primary Spine Care 2: Utilizing Research in Trauma, The ability of your electronic health records to convey tissue pathology while documenting case studies, field experiments, randomized trials and systematic literature reviews, Introducing evidence based macros in documentation to support the literature and necessity of care. Academy of Chiropractic Post-Doctoral Division, Cleveland University Kansas City, Long Island, NY., 2021

Primary Spine Care 2: Chiropractic Evidence, Analyzing segmental pathology, adjusting vs. mobilization with cervicogenic headaches, Opioid alternatives and case management of mechanical spine pain based upon outcome studies. Academy of Chiropractic Post-Doctoral Division, Cleveland University Kansas City, Long Island, NY., 2021

Primary Spine Care 2: Chiropractic Spinal Adjustment Central Nervous System Processing, Literature reviews of mechanoreceptor, proprioceptor and nociceptor stimulation of later horn gray matter with periaqueductal stimulation affecting the thalamus and cortical regions with efferent distribution in disparate regions of the body in both pain and systemic stimulation. Academy of Chiropractic Post-Doctoral Division, Cleveland University Kansas City, Long Island, NY., 2021

Impairment Rating, Impairment Rating, The understanding and utilization of the protocols and parameters of the AMA Guide to the Evaluation of Permanent Impairment 6th Edition. Spine,

neurological sequelae, migraine, sexual dysfunction, sleep and arousal disorders, station and gait disorders and consciousness are detailed for impairment rating. Herniated discs, radiculopathy, fracture, dislocation and functional loss are also detailed in relation to impairment ratings. ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2019, 2020

Primary Spine Care 9, Chiropractic as the First Option for Spine, A Literature-Based Standard, Utilizing clinical findings in conjunction with advanced imaging and electrodiagnostic findings in managing collaborative relationships with medical specialists. Applying a literature standard to care to ensure conservative care as the first option. PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island NY 2020, 2020

Primary Spine Care 9, Chiropractic as the First Option for Spine, A Literature-Based Standard, Managing spinal related cases based upon MRI findings of herniations, bulges, protrusion, extrusions (comminuted and fragmented) utilizing thin-sliced acquisition protocols. When to consider ordering T1, T2, Short Tau Inversion Radiant, proton density and Dixon sequencing for spinal related pathology, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island NY 2020, 2020

Primary Spine Care 9, Chiropractic as the First Option for Spine, A Literature-Based Standard, Creating literature-based documentation inclusive of history and a clinical examination that encompasses causality, diagnosis, prognosis and treatment plans. Ensuring the whole person impairment ratings are consistent with contemporary literature, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island NY 2020 2020

Primary Spine Care 9, Chiropractic as the First Option for Spine, A Literature-Based Standard, Spinal biomechanical engineering models related to pathobiomechanics and literature-based standards in creating an accurate diagnosis, prognosis, and treatment plan. Determining impairment ratings based upon alteration of motion segment integrity utilizing motion-imaging, and creating demonstrable evidence for continued treatment plans, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island NY 2020 2020

Electrodiagnostics 1, Electrodiagnostics: Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis & Interpretation: Anatomy and Physiology of Electrodiagnostics: An in-depth review of basic neuro-anatomy and physiology dermatomes and myotomes to both the upper and lower

extremities and the neurophysiology of axons and dendrites along with the myelin and function of saltatory for conduction. The sodium and potassium pump's function in action potentials. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY, 2020

Electrodiagnostics 2, Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis & Interpretation: Nerve Conduction Velocity (NCV) Part 1: Nerve conduction velocity testing, the equipment required and the specifics of motor and sensory testing. This section covers the motor and sensory NCV procedures and interpretation including latency, amplitude (CMAP) physiology and interpretation including the understanding of the various nuances of the wave forms. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY, 2020

Electrodiagnostics 3, Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis & Interpretation: Nerve Conduction Velocity (NCV) Part 2: Compound motor action potentials (CMAP) and sensory nerve action potentials (SNAP) testing and interpretation including the analysis and diagnosis of the wave forms. It also covers compressive neuropathies of the median, ulnar and posterior tibial nerves; known as carpal tunnel, cubital tunnel and tarsal tunnel syndromes. This section offers interpretation algorithms to help understand the neurodiagnostic conclusions Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY, 2020

Ramping Up Your Practice Post-COVID-19 , A Quick Solution Based on Your Documentation & Clinical Excellence, Utilizing your documentation to accurately reflect the Evaluation and Management code billed. Inclusive of a complete current, past history, previous care, and a full review of systems. The management of post-traumatic cases in a collaborative environment in a literature-based standard. Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2020

Documenting Herniated Discs, Age-Dating Disc Pathology, and Connective Tissue Pathology as Sequella to Trauma, Case Management, Spinal MRI and Documentation Documenting Herniated Discs, Age-Dating Disc Pathology, and Connective Tissue Pathology as Sequella to Trauma , Herniated Discs and Connective Tissue Pathology, differentially diagnosing herniated discs vs. normal and bulging discs and protruded, extruded and fragmented discs. Normal vs. Pathological connective tissues and age-dating herniated discs. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY, 2020

Case Management of Traumatic Spinal Injuries, Case Management, Spinal MRI and Documentation, Case Management of Traumatic Spinal Injuries, Understanding flexion-extension cervical injures and diagnosing connective tissue pathology. Determining impairments and the

literature-based standard for permanent injuries. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY, 2020

Managing Herniated and Bulging Discs, Serious Injury in Non-Herniated Cases from Trauma, Case Management, Spinal MRI and Documentation, Managing Herniated and Bulging Discs, Serious Injury in Non-Herniated Cases from Trauma, Spinal disc morphology, and innervation. Herniated, bulged, protruded, and sequestered disc characteristics and management. Literature-based documentation requirements for no-dis spinal injuries. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY, 2020

Herniated Discs and Permanent Brain Malfunction & Biomechanical Failure , Case Management, Spinal MRI and Documentation, Herniated Discs and Permanent Brain Malfunction & Biomechanical Failure, A case-study of a post-traumatic herniated disc and related brain malfunction supported by contemporary literature, MRI acquisition, and necessity protocols. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY, 2020

Demonstrative Documentation of Disc Herniation and MRI Physics, Case Management, Spinal MRI and Documentation, Demonstrative Documentation of Disc Herniation and MRI Physics, Understanding the documentation requirements to demonstratively show spinal disc lesions in reporting pathology. Understanding the physics of a nucleus resonating in T1 and T2 weighted imagery. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY, 2020

Post-Traumatic Herniated Discs, Related Migraines-Headaches & Strain/Sprain Permanencies, Case Management, Spinal MRI and Documentation, Post-Traumatic Herniated Discs, Related Migraines-Headaches & Strain/Sprain Permanences, Relationship of headaches, and migraines to cervical spine disc herniation, clinical rationale for ordering MRI's and the relationship of ligamentous pathology to spinal trauma. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY, 2020

Documentation of Low-Speed Crashes in Determining Etiology of Serious Bodily Injuries, Case Management, Spinal MRI and Documentation, Documentation of Low-Speed Crashes in Determining Etiology of Serious Bodily Injuries, Documentation requirements during the evaluation, and management encounter to understand the etiology of spinal injuries. Having a complete understanding the forces involved to conclude a differential diagnosis, while concurrent ruling malingers, if applicable. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY, 2020

Electrodiagnostics 4, Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis & Interpretation: Needle Electromyogram (EMG) Studies: The EMG process, inclusive of how the test is performed and the steps required in planning and electromyographic study. This covers the spontaneous activity of a motor unit action potential, positive sharp waves and fibrillations. The insertional activity (both normal and abnormal), recruitment activity in a broad polyphasic presentation and satellite potentials. This covers the diagnosing of patterns of motor unit abnormalities including neuropathic demyelinated neuropathies along with acute myopathic neuropathies. This section also covers the ruling out of false positive and false negative results. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY, 2020

Electrodiagnostics 5, Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis & Interpretation: Overview of EMG and NCV Procedures, Results, Diagnoses and Documentation. The clinical incorporation of electrodiagnostic studies as part of a care plan where neuropathology is suspected. It also covers how to use electrodiagnostics in a collaborative environment between the chiropractor as the primary spine care provider and the surgeon, when clinically indicated. This section covers sample cases and health conclude and accurate treatment plans based upon electro-neurodiagnostic findings when clinically indicated. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY, 2020

Imaging and its Relevance to Your Practice, MRI results are often a fork-in-the-road not only in clinical decision making but also in the direction of litigation in med-legal cases. It is a simple, yet fundamental observation that many human musculoskeletal conditions are impacted by gravity, and that many patients experience signs and symptoms in weight bearing positions even when they do not in the recumbent one. Thus, recumbent imaging alone may not demonstrate the full degree of pathology, due to muscle and ligament relaxation and in the case of the spine, disc retraction. Conventional magnetic resonance imaging systems are limited to acquiring scans with patients in the recumbent position (r-MRI). The Positional Weight-Bearing MRI (pwb-MRI) system allows upright, angled (slanted) and recumbent imaging, replicating partial or full weight bearing conditions. It also allows kinetic maneuvers of the patient's whole body or any body part. Our service enables imaging of the relevant body part in any position of normal everyday stress, across the limits of normal range of motion. Even more importantly, imaging is performed in the specific position of the patient's clinical symptomatology. Several published scientific studies and reviews have validated that radiologically occult but clinically relevant weight bearing and/or motion dependent disease can be better demonstrated on pwb-MRI compared to conventional MRI. These studies have imaged the spine in a close-to-physiological state, either by using external axial loading or better still, by imaging with flexion-extension, in the erect position using pwb-MRI. The literature indicates that Positional Weight-Bearing MRI provides a more sensitive evaluation of spinal pathology. This in turn may provide the referring physician with a more relevant diagnosis, especially in cases where the pain is worse in a sitting or standing position. California Chiropractic Association, 2020

MR & Radiograph Review of the Lumbar Spine, A practical review of MRI and x-ray evaluation of the spine and appropriate referral for advanced imaging. Emphasis will be placed on x-ray positioning, interpretation of signs and search pattern, appropriate referral, case management implications and advanced imaging. MRI of the cervical and lumbar spine with review of x-ray positioning and evaluation of radiographs. Discussion will include radiographic signs, clinical impact, and the need for additional studies and advanced imaging- particularly MRI of the spine. Discussion will include radiographic signs, clinical impact, and the need for additional studies or advanced imaging such as MRI. Case studies will include x-rays followed by MRI with discussion of advanced imaging terminology and clinical application. California Chiropractic Association, 2020

Spine Injury Review, An evaluation of the spine, specific to trauma and spinal instability. Emphasis will be placed on x-ray positioning, interpretation of signs and search pattern, appropriate referral, case management implications and advanced imaging. Review of x-ray positioning, evaluation and interpretation of the spine, emphasis on trauma and spinal instability. Discussion will include radiographic signs, clinical impact and a need for additional studies or advanced imaging. Review of spine evaluation and interpretation with emphasis on trauma and spinal instability. Discussion will include radiographic signs, clinical impact and a need for additional studies or advanced imaging. California Chiropractic Association, 2020

Pathobiomechanics And Documentation , CPT Coding Guidelines for Initial and Established Patients with particular attention paid to Patient History, Review of Systems, Social and Family History, Physical Examination, and Medical Decision making. Specific differences in coding levels and required elements for a 99202-99203-99204-99205. Academy of Chiropractic Post-Doctoral Division, Cleveland University Kansas City, Long Island, NY, 2020, 2020

Using Documentation and Ethical Relationships, Pathways to improve coordination of care, and interprofessional communication with collaborating physicians. Maintaining ethical relationships in the medical-legal community through documentation and communication of demonstrable diagnosis, prognosis and treatment plans. Academy of Chiropractic Post-Doctoral Division, Cleveland University Kansas City, Long Island, NY., 2020

Spinal Biomechanical Engineering Clinical Application, History of clinical biomechanics with an emphasis on the diagnosis and management of spine pain of mechanical/functional origin. Evidence-based symptomatic vs. asymptomatic parameters using peer-reviewed medical index literature. Computerized mensuration analysis of spinal biomechanical pathology. Comparison of demonstrable spinal biomechanical failure on imaging to clinical evaluation and physical examination. Academy of Chiropractic Post-Doctoral Division, Cleveland University Kansas City, Long Island, NY., 2020

Spinal Biomechanical Engineering Clinical Grand Rounds, Case reviews utilizing E/M, MRI, and x-ray mensuration report to conclude an accurate diagnosis, prognosis, and treatment plan. Common diagnosis requiring interprofessional collaboration with a discussion of diagnostic dilemmas and proper communication methods. Academy of Chiropractic Post-Doctoral Division, Cleveland University Kansas City, Long Island, NY., 2020

Mild Traumatic Brain Injury, Traumatic Brain Injury and Concussion, Deferentially diagnosing mild traumatic brain injury vs. traumatic brain injury and the clinical and imaging protocols required to conclude an accurate diagnosis for head trauma. [Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards], Academy of Chiropractic Post Doctoral Division, 2019

Interprofessional Hospital Based Spine Care, Trends in hospital and emergent care in the healthcare delivery system inclusive of policies, hospital staffing and current care paths for mechanical spine issues. [Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards],Academy of Chiropractic Post Doctoral Division, 2019

Medical-Legal Ethical Relationships, Documentation and Legal Testimony, Report writing for legal cases, the 4 corners of a narrative and documenting damages with understanding defense medical documentation and consistent reporting of bodily injuries. Academy of Chiropractic, Post-Doctoral Division, PACE approved of the Federation of Chiropractic Licensing Boards, Cleveland University-Kansas City, College of Chiropractic, Long Island NY, 2019

Medical-Legal Ethical Relationships, Documentation and Legal Testimony, Part 2, Understanding report writing and the types of medical reports required for court inclusive of diagnosis, prognosis and treatment plans with requirements of reporting causality and permanency. Academy of Chiropractic, Post-Doctoral Division, PACE approved of the Federation of Chiropractic Licensing Boards, Cleveland University-Kansas City, College of Chiropractic, Long Island NY, 2019

Medical-Legal Ethical Relationships, Documentation and Direct Testimony, Organizing your documentation and understandng all collaborative documentation and how it fits into your diagnosis, prognosis and treatment plan, Understanding the nuances of the functional losses of your patients related to their bodily injuries Academy of Chiropractic Post Doctoral Division, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University- Kansas City, College of Chiropractic, Long Island NY , 2019

Medical-Legal Ethical Relationships, Documentation and Direct Testimony Part 2, Utilizing demonstrative documentation in direct examination and communicating the results of your care concurrently with the written documentation and reporting an accurate diagnosis for all images, Academy of Chiropractic Post Doctoral Division, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University- Kansas City, College of Chiropractic, Long Island NY , 2019

Medical-Legal Ethical Relationships, Documentation and Direct Testimony Part 3, The evaluation, interpretation and reporting of collaborative medical specialists results and concluding an accurate diagnosis inclusive of all findings and reviewing all images to ensure an accurate diagnosis, Academy of Chiropractic Post Doctoral Division, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University- Kansas City, College of Chiropractic, Long Island NY , 2019

Medical-Legal Ethical Relationships, Documentation and Direct Testimony Part 4, Determining and documenting disabilities and impairments inclusive of loss of enjoyment of life and duties under duress and the evaluation and validation of pain and suffering, Academy of Chiropractic Post Doctoral Division, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University- Kansas City, College of Chiropractic, Long Island NY , 2019

Medical-Legal Ethical Relationships, Documentation and Cross Examination Testimony, Reporting your documentation factually and staying within the 4 corners of your medical report and scope of practice inclusive of understanding how your credentials allow you to report your documentation. Academy of Chiropractic Post Doctoral Division, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University- Kansas City, College of Chiropractic, Long Island NY , 2019

Medical-Legal Ethical Relationships, A Documentation Relationship Between the Doctor and Lawyer, The level of organization required in a medical-legal case that accurately reflects the bodily injuries of your patients and the time constraints in rendering an accurate report. Academy of Chiropractic Post Doctoral Division, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University- Kansas City, College of Chiropractic, Long Island NY , 2019

Medical-Legal Ethical Relationships, Report Writing and Preparing for a Legal Case, Reviewing the facts of the case inclusive of your documentation, the defense medical examiner, medical specialists and the attorney to ensure accurate and consistent reporting. Academy of Chiropractic Post Doctoral Division, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University- Kansas City, College of Chiropractic, Long Island NY , 2019

Medical-Legal Ethical Relationships, Report Writing and Preparing for a Legal Case, Creating demonstrative evidence, visuals of your patient's bodily injuries inclusive of x-rays, MRI's, CAT

Scans and electrodiagnostic findings, the spinal biomechanics of herniated disc with ipsilateral findings and contralateral symptomatology. Academy of Chiropractic Post Doctoral Division, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University- Kansas City, College of Chiropractic, Long Island NY , 2019

Colossus, Medical-Legal-Insurance Documentation, Accurate and compliant documentation of history and clinical findings inclusive of functional losses, loss of activities of daily living, duties under duress and permanent loss of enjoyment of life. Prognosing static vs. stable care, gaps in care both in the onset and in the middle of passive care with a focus on detailed diagnosing. The integration of chiropractic academia, the court system and the insurance reimbursers' requirements for complete documentation. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY, 2019

Personal Injury 101 , Evolution of The Personal Injury Case. How Insurance Companies Analyze Personal Injury Medical Claims. Importance of Chiropractors in Personal Injury. 7 Things you must know before handling Personal injury Cases. Assignment of benefits and the new case law. Uninsured and Underinsured Motorist Claims. California Chiropractic Association, 2019

Imaging and Its Relevance to PI , Overview of the most common imaging modalities used in musculoskeletal injuries – XRay, CT, MRI. Basic MRI physics – How does an MRI work without any radiation. Relevance of using proper nomenclature in radiology reports for personal injury cases. How MRIs may be “False Negative”, how that affects both medical and legal case management in personal injury cases and how to utilize proper techniques to minimize that problem. California Chiropractic Association, 2019

Imaging and Its Relevance to PI , Overview of the most common imaging modalities used in musculoskeletal injuries – XRay, CT, MRI. Basic MRI physics – How does an MRI work without any radiation. Relevance of using proper nomenclature in radiology reports for personal injury cases. How MRIs may be “False Negative”, how that affects both medical and legal case management in personal injury cases and how to utilize proper techniques to minimize that problem. California Chiropractic Association, 2019

Appropriate Evaluation/Diagnosis/Treatment, General classes of neck and back injuries. Which examinations and procedures are helpful/required? Review of current best practices for neck and back pain treatment and evaluation. Home care measures. Multi-modal care. Which therapies have evidence they work, and which don't. Trials of care & therapeutic withdrawal. Co-management/referral issues. California Chiropractic Association, 2019

Documentation Personal Injury, Obtaining and documenting the history. How to document clinically meaningful changes & when to reassess. What IME's look for in your notes. Bullet proofing your care with practice guidelines and research. How to get your care denied and not paid. Documenting consent. Red flags & yellow flags to consider- documenting factors that delay recovery. Documenting functional improvement. Daily treatment notes: the good, the bad and the ugly. California Chiropractic Association, 2019

Prognosis and Future Care Explanations, Epidemiology of neck and back pain- how long will it last? Maximum medical improvement: when, and what next. Prognosis and your crystal ball. Avoiding "maintenance" and "supportive care" terms. What are reasonable treatment parameters for chronic conditions. California Chiropractic Association, 2019

Impairment Rating, The understanding and utilization of the protocols and parameters of the AMA Guide to the Evaluation of Permanent Impairment 6th Edition. Spine, neurological sequelae, migraine, sexual dysfunction, sleep and arousal disorders, station and gait disorders and consciousness are detailed for impairment rating. Herniated discs, radiculopathy, fracture, dislocation and functional loss are also detailed in relation to impairment ratings. Cleveland University - Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY,, 2019

Bio-Neuro-Mechanical Mechanism of the Chiropractic Spinal Adjustment, Primary Spine Care 5, The biological, neurological and mechanical mechanisms and pathways from the thrust to the lateral horn and brain connection and how the brain processes the chiropractic spinal adjustment based upon the literature. Care paths of chiropractic and physical therapy from an outcome basis. Academy of Chiropractic PostDoctoral Division, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University- Kansas City, College of Chiropractic, Long Island NY, 2018

Basic and special concepts of biomechanics, Properties of discs, ligaments, muscle and bone, as well as the normal motion of the cervical spine. Soft tissues have viscoelastic material properties which is key to understanding injury mechanisms. He will also touch on the concepts of coupled, intersegmental, and paradoxical motion. Spine Research Institute of San Diego CA, 2018

Injury impairment scales (AIS, IIS, ISS, KABCO), Widely adopted cervical acceleration/deceleration (CAD) (or whiplash-associated disorder or WAD) grading system which he developed more than a decade ago. This grading system, which has now been validated in numerous studies, provides the basis for effective intervention and for prognostication. Spine Research Institute of San Diego CA, 2018

Epidemiology of whiplash, The tremendous scope of the current public health problem and the factors contributing to it. He reviews the substantial international literature, including the latest crash data of real world crashes obtained from on-board black boxes. He develops from this analysis—as well as his own published research—a risk estimate for adults and for children, incidence rates, and the prevalence of chronic pain in the U.S. attributable to motor vehicle trauma. With all the confusion and misinformation that exist regarding low speed crashes, amounts of property damage, and relative risk, Dr. Croft is careful to clarify these issues in great detail. For example, and perhaps counter-intuitively, within a specific range of low speed crashes, it is shown that the risk for occupant injury is actually greater when property damage is minimal. Spine Research Institute of San Diego CA, 2018

Brain, neck, and cervical spine trauma mechanisms from motor vehicle crashes (MVC), Nomenclature and progresses to a discussion of velocity change (ΔV), barrier velocity, and the ways in which velocity, time, and acceleration interact to affect the risk for occupant injury. Dr. Croft then takes attendees on an exploration of our current knowledge based on mathematical models, animal experiments (including the porcine experiments from whence the neck injury criterion (NIC) was proposed), cadaver experiments (where many recent discoveries have been made), dummy experiments (including those of the newest rear impact dummies or RID, which have been tested at the Spine Research Institute of San Diego by Dr. Croft and others), and, finally, the numerous human subject volunteer crash tests. Dr. Croft discusses his several years of crash testing as well as all of the other serious research in that area. As always, his presentation is replete with video footage and illustration to assist in understanding. Also in this section, Dr. Croft will discuss crash vectors other than rear, the important vehicle and subject parameters which modify risk, the dubious practice of estimating injury risk from property damage, the New Car Assessment Program and its unintended effects in low speed crashes, head restraints, seat backs, air bags, and other safety systems and how they modify injury risk and severity. Also discussed will be the general sequence of kinematic events in CAD injury and their relative timing, the head injury criterion (HIC), the neck injury criterion (NIC), and other important injury assessment reference values (IARV). Spine Research Institute of San Diego CA, 2018

Soft tissue injuries, Soft and hard tissue injuries resulting from whiplash, including data obtained from experimental animal research and surgical and autopsy findings. Fractures (stable and unstable), dislocations, and the broad range of soft tissue lesions, or WAD, will be discussed in the context of mechanism of injury and vector-based occupant kinematics. Dr. Croft has catalogued an immense database of this literature. He will offer an explanation for most of the common components of CAD/WAD including headache, various types of neck and back pain, shoulder and upper extremity pain, lower extremity pain, neurological syndromes, dizziness/lightheadedness, vertigo, visual disturbances, cognitive, and endocrinological disorders, and will additionally explore the common phenomenon of delayed onset of symptomatology. Spine Research Institute of San Diego CA, 2018

Common Syndromes, Common syndromes associated with whiplash include cognitive disorders, usually resulting from mild traumatic brain injury (MTBI), postconcussion syndrome (PCS), thoracic outlet syndrome (TOS), TM joint disorder, carpal tunnel syndrome (CTS), posttraumatic headache, myofascitis, and numerous other less common conditions. Also discussed will be the clinical and diagnostic components of each, again making constant reference to current world literature. Common symptoms of whiplash will be explained and, for those conditions that remain poorly understood, Dr. Croft will discuss the relevant literature and develop and/or describe the best and most current hypotheses. Dr. Croft goes into extensive detail on the subject of MTBI, ranging from the history of our knowledge base to current predictive models, and outlines the range of common symptoms resulting from this all too common, but poorly understood, condition. Headaches are discussed in the context of current classification systems, including that of the International Headache Society. Long-term consequences of MTBI in children and adults is also discussed. Spine Research Institute of San Diego CA, 2018

Conditions affecting muscles, The two most common forms of posttraumatic muscle disorder: myofascitis and fibromyalgia, going into detail about their respective diagnostic methods and criteria, such as those of the American College of Rheumatology. He will also provide a historical account of this controversial area, beginning with Virchow in 1852, and ending with the latest research findings. Spine Research Institute of San Diego CA, 2018

Pain syndromes, Neurogenic pain, i.e., the pain that is conducted from peripheral nociceptor to dorsal root ganglion, to spinal cord, and eventually to the somatosensory cortex via the lateral spinothalamic tracts and thalamus, is the type studied and understood by most practitioners. However, few practitioners possess a deep understanding of discogenic, vertebrogenic, and sclerogenic pain mechanisms, all of which are critically important in the diagnosis, management, and medicolegal explanation of most CAD cases. Dr. Croft explores the various pain mechanisms associated with CAD injury and its sequelae. He also looks at the epidemiology of chronic pain, sleep disturbance, and depression as an alternate explanation for some CAD symptoms. Spine Research Institute of San Diego CA, 2018

Outcome of CAD injury, For many, this is perhaps the most poorly understood area of this science, despite the magnitude of the current literature that is available. It is also one of the most hotly contested subjects from a forensic standpoint. Yet, in spite of the commonly voiced misconceptions about recovery from CAD, the preponderance of the evidence is clear and unambiguous. Dr. Croft reviews the substantial outcome literature and statistics in detail, and presents not only a thorough meta-analysis of it, but also develops a comprehensive risk analysis methodology found nowhere else. He explores the known risk factors for acute injury, as well as the risk factors for poor outcome—information that provides the physician and the patient with a meaningful guide to management and a scientific basis for clinical expectation. Moreover, Dr. Croft

will emphasize the unique qualifications and role of the physician in this comprehensive risk analysis, which typically overshadows simple crash reconstruction or biomechanical analysis in its scope and construct validity. The section concludes with a review of the current literature on litigation neurosis concerning CAD and MTBI. Spine Research Institute of San Diego CA, 2018

Accident reconstruction primer, Newton's laws of motion, vehicle dynamics, conservation of linear momentum methods, restitution and energy methods, barrier equivalent methods, computer methods, and the practical application of those laws to the understanding vehicle dynamics and occupant kinematics. Dr. Croft will also discuss the application of data retrieved from event data recorders (ERD)—the vehicle's on-board black box—and his own research from years of crash testing. He will also go beyond classical reconstruction and correlate these reconstructions with occupant kinematics and known risk factors: a dimension in which classically-trained accident reconstructionists, biomechanists, and engineers are not trained. With a good comprehension of the principles taught in this section, along with the risk factor analysis material and other information presented in Module 1, physicians will have the necessary intellectual tools to assess the relative validity and credibility of most reconstructions and biomechanical analyses pertaining to LOSRIC. A final section critically examines the uncertainty of LOSRIC reconstruction and presents both mathematical (log-differential) and practical ways of assessing the reliability and validity of these reconstructions based on the data from which they were constructed. Spine Research Institute of San Diego CA, 2018

History taking MVC, The historical data necessary to provide not only optimal medical/chiropractic care, but also to ensure that a comprehensive record of pertinent facts is available for forensic purposes when needed. Attendees will learn to use a standardized history form developed by Dr. Croft. From this, concise and comprehensive case reports can be produced, as will be developed in great detail in Module 3. Moreover, in cases in which permanent residuals result, it is important to make a determination concerning apportionment of any pre-existing disability that may have been present. Dr. Croft will present a standardized, scaled lexicon for severity and frequency of symptoms for general use and for use in apportionment questions. This method is formula-based and is highly dependent on accurate historical data. Spine Research Institute of San Diego CA, 2018

Physical examination, The important general and special examination procedures and methods, including neurological (sensory, deep tendon and superficial reflexes, motor, visual, and coordination), orthopaedic, and cognitive examination methods. Dr. Croft will discuss the use of the SCL-90-R and all of its dimensions, the postconcussion syndrome examination, and vestibular tests. He'll also discuss musculoskeletal exam procedures, special tests, such as those for the TM joint, CTS, and TOS; tests to rule out malingering (including the AMA's methods of assessing repetitive ranges of motion vs. the coefficient of variation methods), and the most scientific way of estimating probable normal ranges of motion using published regression equations. Spine Research Institute of San Diego CA, 2018

Radiographic examination, Guideline-based radiographic procedures in terms of what views to obtain and when. He will also discuss the sensitivity and specificity of radiography in terms of its limitations in the diagnosis of both fractures and soft tissue injury, comparing emergency department films (e.g., cross-table laterals) with clinic-based films (e.g., standing 7-view studies). He'll contrast cost containment issues with physician accountability and responsibility. He'll additionally review the various established methods of stability assessment of motion films, using mensuration schemes as well as templating protocols, and he'll point out their relative validity. Some are as recent as 2003. He'll discuss the cervical curve and the SRISD's ongoing research in that area. Spine Research Institute of San Diego CA, 2018

CT examination, CT technology remains the test of choice in the acute situation for conditions such as serious brain trauma. It is also still an important imaging study for fracture and other conditions. These are discussed in this section. Spine Research Institute of San Diego CA, 2018

MRI examination, Motion MRI and MRI neurography, as well the limitations of this technology in CAD trauma. It is now emerging that special techniques, such as proton density-weighted MRI, are required to visualize the various ligamentous components of the cervical spine and that certain cervical ligaments are better viewed using T2-weighted fast spin echo sequences, while others are better appreciated using T1-weighted sequences. Despite this, however, recent cadaver research highlights the shortcomings of even high resolution MRI in the detection of some cervical soft tissue lesions. Dr. Croft will discuss the most recent and relevant studies. He will also contrast the sensitivity of CT, MRI, and SPECT for brain injury. Spine Research Institute of San Diego CA, 2018

Special diagnostic imaging, Advanced diagnostic imaging modalities which are available to clinicians today, including intravenous contrast-enhanced MRI and CT, arthrography, discography, videofluoroscopy (VF), radionuclide bone scan, single photon emission computed tomography (SPECT), positron emission tomography (PET), and color-coded duplex sonography (CCDS). The relative strengths, weaknesses, and clinical indications of each will be described. An algorithm for choosing specific tests will be developed. In this section, Dr. Croft will also review the natural history of disc disease and the prevalence of herniation among the asymptomatic population in both cervical and lumbar spines—another area rife with misinformation. Spine Research Institute of San Diego CA, 2018

Electrodiagnostics, Foundational discussion of relevant neuropathophysiology which segues into an easily understood synthesis of the currently available electrodiagnostic tests which are potentially useful in CAD trauma. These include various forms of electroencephalography (EEG), brain stem auditory evoked response (BAER), visual evoked potentials (VEP), electronystagmography (ENG), brain electrical activity mapping (BEAM), electromyography (EMG)

and sEMG), nerve conduction velocity (NCV), and somatosensory evoked potentials (SSEP). Discussions will always include the modality's relative strengths and weaknesses and clinical indications/contraindications. As always, tables are provided for convenient reference. Spine Research Institute of San Diego CA, 2018

Summary of diagnostic testing, Summary and simplification of the myriad of imaging, electrodiagnostic, and other tests that are currently available on a condition-by-condition basis. For example, for MTBI, imaging studies include CT and MRI, SPECT can be used to evaluate perfusion, PET can be used to evaluate the brain's metabolism, and potentially useful electrodiagnostic tests include QEEG, BEAM, VEP, ENG, BAER. Other available tests include chemosensory evaluation, audiologic evaluation, polysomnography, and posturography. All are available in most areas of the country. Spine Research Institute of San Diego CA, 2018

Diagnosis/impression, Methods of developing working, differential, and final diagnoses. This will include assembling sensible and accurate diagnoses encompassing stage, causation, condition, and complications. This is an indispensable skill which many practitioners have yet to completely master. Emphasized here are the skills required to provide clear, concise, unambiguous, and accurate communication of your objective assessment of the patient's condition(s). Dr. Croft cautions, for example, against the use of poorly defined terminology, and against commonly misused diagnoses. Spine Research Institute of San Diego CA, 2018

Report of findings, Honest and straightforward communication with patients, avoiding the unrealistic or overly sanguine expectations commonly espoused by some authorities, while also avoiding pessimism or negativism at the other end of the spectrum. This section includes a risk-based discussion of informed consent pertaining to spinal manipulation along with a brief presentation of Dr. Croft's published research on arterial injuries attributed to spinal manipulation. Spine Research Institute of San Diego CA, 2018

Designing a treatment plan, CAD treatment guidelines he developed in 1992, and how to use them. These guidelines have been widely adopted in the U.S. and Canada. Grading the severity and staging the injury are important components discussed here, as well as how to deal with common complicating factors. Dr. Croft will tie in a recap of known risk factors from Module 1 here because they figure into the grading system and the topic of maximal medical improvement (MMI). Spine Research Institute of San Diego CA, 2018

Treatment of TMD, An overview written by Dennis Steigerwald, DC, one of the leading chiropractic TMD experts in the multidisciplinary management of the TM joint. Spine Research Institute of San Diego CA, 2018

Spine Brain Connection in Pain Pathways, ; Primary Spine Care 5, MRI Spine The spine-brain connection in managing chronic pain patients. Understanding how chronic pain negatively effects brain morphology and potential pathology as sequela. The role of chiropractic in preventing the loss of gray matter and the most recent evidence as outlined in indexed peer reviewed literature over the last 10 years verifying chiropractic's role. Academy of Chiropractic PostDoctoral Division, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University- Kansas City, College of Chiropractic, Long Island NY, 2018

Current Literature Standards of MRI Spine Interpretation, Primary Spine Care 5, MRI Spine Interpretation of the spine. How to triage a trauma and non-trauma with advanced imaging and document the necessity. We will also cover the basics of MRI Spine Interpretation inclusive of all types of herniations, bulges. Academy of Chiropractic Post Doctoral Division, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University- Kansas City, College of Chiropractic, Long Island NY , 2018

Evidenced Based Care in a Collaborative Setting, Primary Spine Care 5, A literature based model for collaborating with hospitals, medical primary care providers and specialists. Reviewing the documentation requirements to communicate the diagnosis, prognosis and treatment plans with medical entities and having the evidence as a basis for those recommendations Academy of Chiropractic Post Doctoral Division, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University- Kansas City, College of Chiropractic, Long Island NY , 2018

Diagnostic dilemmas and connective tissue Morphology, Spinal Trauma Pathology, Triage and Connective Tissue Injuries and Wound Repair, Triaging the injured and differentially diagnosing both the primary and secondary complaints. Connective tissue injuries and wound repair morphology focusing on the aberrant tissue replacement and permanency prognosis potential. Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2018

Ligament anatomy and injury research and spinal kinematics, Spinal Trauma Pathology, Ligament Anatomy and Injury Research and Spinal Kinematics, Spinal ligamentous anatomy and research focusing on wound repair, future negative sequelae of abnormal tissue replacement and the resultant aberrant kinematics and spinal biomechanics of the spine. Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, 2018

Clinical Grand Rounds Orthopedic Testing, Clinical Grand Rounds, how to integrate orthopedic testing in the clinical setting utilizing both simple and complex patient scenarios. It includes potential stroke, or vertebrobasilar insufficient patients and understanding the nuances in a clinical evaluation with orthopedic testing as a critical part of the evaluation and screening process. How to integrate orthopedic testing in the clinical setting utilizing both simple and complex patient scenarios. It includes potential stroke, or vertebrobasilar insufficient patients and understanding the nuances in a clinical evaluation with orthopedic testing as a critical part of the evaluation and screening process. Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

Lumbar Spine Orthopedic Testing, : Lumbar Spine, Integration of lumbar orthopedic testing in the clinical setting to develop a differential diagnosis. Utilizing radiographic and advanced imaging inclusive of MRI and CAT scan findings to verify tissue pathology suspected by orthopedic testing conclusions and developing a treatment plan as sequelae. Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

Cervical Spine Part 2 Orthopedic Testing, Cervical Spine, Integration of cervical orthopedic testing in the clinical setting to develop a differential diagnosis. Utilizing radiographic and advanced imaging inclusive of MRI and CAT scan findings to verify tissue pathology suspected by orthopedic testing conclusions and developing a treatment plan as sequelae. Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

Cervical Spine Orthopedic Testing, Orthopedic Testing: Cervical Spine, Integration of cervical orthopedic testing in the clinical setting to develop a differential diagnosis. Utilizing radiographic and advanced imaging inclusive of MRI and CAT scan findings to verify tissue pathology suspected by orthopedic testing conclusions and developing a treatment plan as sequelae. Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

Basics of Orthopedic Testing, Principles, Clinical Application and Triage, Integration of orthopedic testing in the clinical setting to develop a differential diagnosis. Utilizing radiographic and advanced imaging inclusive of MRI and CAT scan findings to verify tissue pathology suspected by orthopedic testing conclusions and developing a treatment plan as sequelae. Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of

Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

Clinical Evaluation & Protocols for Identifying Stroke Risk, Clinical Evaluation and Protocols for Identifying Stroke Risk, The neurological history and examination for identifying stroke risks with a focus on supra and infratentorial regions, upper and lower motor lesions, cranial nerve signs, spinal cord pathology, motor and sensory pathology and gait abnormalities. Examining genetic and family histories along with dissection risk factors. Stroke orthopedic testing and clinical guidelines pertaining to triage for the primary care provider. . Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2018

Stroke Principles of Treatment an Overview for the Primary Care Provider, Stroke Principles of Treatment an Overview for the Primary Care Provider, Stroke type and treatments performed by vascular specialists. The goals of treatment with the physiology of the infarct and penumbra zones and the role of immediate triage in the primary care setting. Detailing the complications of stroke and future care in the chiropractic, primary care or manual medicine clinical setting. Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

Stroke Anatomy and Physiology Part 2, Stroke Anatomy and Physiology: Stroke Types and Blood Flow, Various types of stroke identifying ischemia, hypoperfusion, infarct and penumbra zones and emboli. Cardiac etiologies and clinical features as precursor to stroke with associated paradoxical emboli and thrombotic etiologies. Historical and co-morbidities that have etiology instroke inclusive of diabetes, coagulopathy, acquired and hereditary deficiencies. Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

Stroke Anatomy and Physiology Part 1, Stroke Anatomy and Physiology: Brain Vascular Anatomy, The anatomy and physiology of the brain and how blood perfusion effects brain function. A detailed analysis of the blood supply to the brain and the physiology of ischemia. Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

Spinal Biomechanics, Central Nervous System and Spinal Disc Nomenclature, Spinal Trauma Pathology, Spinal Biomechanics, Central Nervous System and Spinal Disc Nomenclature, The

application of spinal biomechanical engineering models in trauma and the negative sequelae it has on the central nervous system inclusive of the lateral horn, periaqueductal grey matter, thalamus and cortices involvement. Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2018

Biomechanics of Traumatic Disc Bulge and Age Dating Herniated Disc Pathology, Spinal Trauma Pathology, Biomechanics of Traumatic Disc Bulge and Age Dating Herniated Disc Pathology, The biomechanics of traumatic disc bulges as sequelae from trauma and the comorbidity of ligamentous pathology. Age-dating spinal disc pathology in accordance with Wolff's Law. Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2018

Spinal trauma pathology, clinical grand rounds, Spinal Trauma Pathology, Clinical Grand Rounds, The review of case histories of mechanical spine pathology and biomechanical failures inclusive of case histories, clinical findings and x-ray and advanced imaging studies. Assessing comorbidities in the triage and prognosis of the injured. Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2018

Spinal trauma pathology, Research and documentation Review, Spinal Trauma Pathology, Research Perspectives, The review of current literature standards in spinal trauma pathology and documentation review of biomechanical failure, ligamentous failure and age-dating disc pathology. Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2018

Accident Reconstruction: Research, Causality and Bodily Injury, Delta V issues correlated to injury and mortality, side impact crashes and severity of injuries, event data recorder reports correlated to injury, frontal impact kinematics, crash injury metrics with many variables and inquiries related to head restraints. [Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards], Academy of Chiropractic Post Doctoral Division, 2017

Accident Reconstruction: Skid Marks, Time, Distance, Velocity, Speed Formulas and Road Surfaces, The mathematical calculations necessary utilizing time, distance, speed, coefficients of friction and acceleration in reconstructing an accident. The application of the critical documentation acquired from an accident site. [Texas Chiropractic College or PACE Recognized by

The Federation of Chiropractic Licensing Boards],Academy of Chiropractic Post Doctoral Division, 2017

Accident Reconstruction: Research, Causality and Bodily Injury, Delta V issues correlated to injury and mortality, side impact crashes and severity of injuries, event data recorder reports correlated to injury, frontal impact kinematics, crash injury metrics with many variables and inquiries related to head restraints [Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards],Academy of Chiropractic Post Doctoral Division, 2017

Accident Reconstruction: Skid Marks, Time, Distance, Velocity, Speed Formulas and Road Surfaces, The mathematical calculations necessary utilizing time, distance, speed, coefficients of friction and acceleration in reconstructing an accident. The application of the critical documentation acquired from an accident site [Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards],Academy of Chiropractic Post Doctoral Division, 2017

Accident Reconstruction: Causality, Bodily Injury, Negative Acceleration Forces, Crumple Zones and Critical Documentation, Factors that cause negative acceleration to zero and the subsequent forces created for the vehicle that get translated to the occupant. Understanding critical documentation of hospitals, ambulance reports, doctors and the legal profession in reconstructing an accident. [Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards],Academy of Chiropractic Post Doctoral Division, 2017

Accident Reconstruction, Terms, Concepts & Definitions, The forces in physics that prevail in accidents to cause bodily injury. Quantifying the force coefficients of vehicle mass and force vectors that can be translated to the occupant and subsequently cause serious injury. [Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards], Academy of Chiropractic Post Doctoral Division, 2017

Mild Traumatic Brain Injury, Traumatic Brain Injury and Concussion, Deferentially diagnosing mild traumatic brain injury vs. traumatic brain injury and the clinical and imaging protocols required to conclude an accurate diagnosis for head trauma. [Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards], Academy of Chiropractic Post Doctoral Division, 2017

Primary Spine Care, Neurophysiological central and peripheral nervous systems mechanisms of pain with integrated higher cortical functions of the thalamus, cingulate, amygdala, pre-frontal, motor and sensory cortexes. Trauma and chronic pain care effecting mechanoreceptors,

nociceptors and proprioceptors through adjustive therapy based upon evidenced based care and current literature verification Texas Chiropractic College, New York State Department of Education Board for Chiropractic, Academy of Chiropractic, Academy of Chiropractic, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, 2015

Primary Spine Care with Interdisciplinary Collaborative Care, Triage of patients based upon MRI findings of disc herniation, disc bulge, protrusion, extrusion or sequestrations and spinal cord or nerve root negative sequella, clinical findings of neuro-compressive pathologies and neurodiagnostic findings of EMG-NCV, SSEP, VEP, BAER, VEP and V-ENG findings. Texas Chiropractic College, New York State Department of Education Board for Chiropractic, Academy of Chiropractic, Academy of Chiropractic, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Islandia NY, 2015

MRI Physics and History, Magnetic fields, T1 and T2 relaxations, nuclear spins, phase encoding, spin echo, T1 and T2 contrast, magnetic properties of metals and the historical perspective of the creation of NMR and MRI. Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015

MRI Normal Anatomy and Protocols, Spinal anatomy of all MRI views utilizing T1, T2, 3D Gradient, stacking and STIR sequences of imaging. Advanced protocols of MRI examination with multiple sequences to create concurrent diagnostic findings Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015

MRI Disc & Spinal Cord and Spinal Canal Pathology, MRI interpretation of spinal disc pathologies as a result of trauma and degenerative factors and resultant neurological compromise. Spinal Cord and Spinal canal pathologies and space occupying lesion interpretation. Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015

MRI Anatomy & History, Normal anatomy of axial and sagittal views utilizing T1, T2, 3D Gradient and STIR sequences of imaging. Standardized and desired protocols in views and sequencing of MRI examination to create an accurate diagnosis in MRI. Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015

MRI Disc Pathology and Spinal Stenosis, MRI interpretation of bulged, herniated, protruded, extruded sequestered and fragmented disc pathologies in etiology and neurological sequelae in relationship to the spinal cord and spinal nerve roots. Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015

MRI Spinal Pathology, MRI interpretation of bone, intradural, extradural, cord and neural sleeve lesions. Tuberculosis, drop lesions, metastasis, ependymoma, schwannoma and numerous other spinal related tumors and lesions. Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015

MRI Methodology of Analysis, MRI interpretation sequencing of the cervical, thoracic and lumbar spine inclusive of T1, T2, STIR and 3D gradient studies to ensure the accurate diagnosis of the region visualized. Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015

MRI Clinical Application, The clinical application of the results of space occupying lesions. Disc and tumor pathologies and the clinical indications of manual and adjustive therapies in the patient with spinal nerve root and spinal cord insult as sequelae. Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015

MRI Interpretation of Spinal Cord, Spinal Disc and Spinal Canal Disorders, MRI interpretation of herniated, protruded, extruded, bulged and sequestered discs & spinal stenosis as sequelae of ligamentous hypertrophy, congenital malformation, spinal cord pathology. Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015

MRI Interpretation of Herniated Disc and Spinal Cord and Root Encroachment, MRI interpretation of herniated, protruded, extruded, bulged and sequestered discs and their relationship to the spinal cord and spinal nerve roots and the clinical correlation to spinal adjustments, manual spinal therapy and joint mobilization. Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015

Spinal Biomechanical Engineering, Cartesian Coordinate System, Cervical Pathobiomechanics, Lumbar Pathobiomechanics, Spinal Biomechanics in Trauma, Organizational Analysis, Cervical Digital Analysis, Lumbar Digital Analysis, Full Spine Digital Analysis Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015

Primary Spine Care, Chiropractic as the First Option for Spine, A Literature-Based Standard, Utilizing clinical findings in conjunction with advanced imaging and electrodiagnostic findings in managing collaborative relationships with medical specialists. Applying a literature standard to care to ensure conservative care as the first option. PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island NY 2020 2013

Electrodiagnostics 4, Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis & Interpretation: Needle Electromyogram (EMG) Studies: The EMG process, inclusive of how the test is performed and the steps required in planning and electromyographic study. This covers the spontaneous activity of a motor unit action potential, positive sharp waves and fibrillations. The insertional activity (both normal and abnormal), recruitment activity in a broad polyphasic presentation and satellite potentials. This covers the diagnosing of patterns of motor unit abnormalities including neuropathic demyelinated neuropathies along with acute myopathic neuropathies. This section also covers the ruling out of false positive and false negative results. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY, 2013

Electrodiagnostics 5, Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis & Interpretation: Overview of EMG and NCV Procedures, Results, Diagnoses and Documentation. The clinical incorporation of electrodiagnostic studies as part of a care plan where neuropathology is suspected. It also covers how to use electrodiagnostics in a collaborative environment between the chiropractor as the primary spine care provider and the surgeon, when clinically indicated. This section covers sample cases and health conclude and accurate treatment plans based upon electro-neurodiagnostic findings when clinically indicated. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY, 2013

Ramping Up Your Practice Post-COVID-19 2, A Quick Solution Based on Your Documentation & Clinical Excellence, A case study of managing a patient where the MRI was inaccurate based upon literature standards and the collaboratively working through a system in triaging an extruded disc patient from psychological support to appropriate surgical care. Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2013

Primary Spine Care 14, Spinal Disc Microanatomy, The understanding of the human spinal discal elements; annulus, nucleus pulposus, cartilaginous end plates inclusive of the neurology, visualization, differentiation from the neonate to adults. The understanding of the etiology of Modic changes on MRI and how spinal biomechanics are altered. ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Cleveland University Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2013

Laser Therapy, Characteristics of Laser, Laser Physics, Safety, Mechanisms of Therapy. Dose, Time and Power. Treatment Procedures, Wound Healing, Tendonopathies, Myofascial Pain, Muscular Injury, Osteoarthritis, Sports Injury and Fatigue, Tinnitus, TMJ and Other Indications Irradia, 2010

Hospital Protocols, Review of Medical Staff and Committees, Admitting Procedures and Criteria, Discharge Procedures, Medical-Surgical Records, Surgical Dictation, Differential Diagnosis, Out Patient Work-Up, X-Ray, EMG, Lab Studies, and Surgical Protocols. American Academy Manual & Physical Medicine, Doctors Hospital of New Boston, 1998

Manipulation Under General Anesthesia, MUA Certification: Review of Anesthesiologist Procedures, Indications, Contraindications, Admitting, Techniques for the Cervical, Thoracic and Lumbar Spines, Extremities, Fibrotic Tissue Stretching Techniques, Patient Safety, Discharge, Charting and Review of Literature. Certification in Manipulation Under Anesthesia, American Academy Manual & Physical Medicine, Doctors Hospital of New Boston, 1998

Clinical Nutrition, Intestinal and Systemic Detoxification, Gastrointestinal Nutrition, Liver Metabolism, Immune Function, Cardiovascular, Glucose Tolerance, Pulmonary Function, Urological Nutrients, Musculoskeletal Nutrition, Urinalysis, Fasting, Hair Analysis, Fecal Analysis, Modified Elimination Diets, etc. Certification in Clinical Nutrition, IPS, 1997

Industrial Disability Examiner, Medical History, Injury Mechanics, Employment History, Activities of Daily Living, Occupational Requirements, Reasonable and Necessary Treatment, Clinical Assessment, Review of Records, Causation, Apportionment, Disability Rating, etc. International Chiropractic Association, 1997

Chiropractic Rehabilitation, Physical Therapy Methods and Concepts: Passive Motion, Active Exercise, Strengthening Exercise, Dynamic Neuromuscular Stabilization, Soft Tissue Mobilization, Dry Needling for Muscular Fibrosis. Canadian Memorial College of Chiropractic, 1996

Chiropractic Rehabilitation, Neurophysiological Foundation for Physical Therapy Approaches: Neuroplasticity, Evolutionary Plasticity, Repair Plasticity, Neuroplastic and Sensorimotor Programs, Training and Exercises, etc. Canadian Memorial College of Chiropractic, 1996

Chiropractic Rehabilitation, Entrapment Syndromes: Etiology, Manifestation, Pathogenesis, Treatment and Diagnosis. Entrapment of; Upper Thoracic Aperture, Scalenus, Costoclavicular, Hyper-Abduction, Supra Clavicular, Median Nerve, Ulnar Nerve, Radial Nerve, Femoral Nerve, Sciatic Nerve, Peroneal Nerve, Tibial Nerve, etc. Treatment and Rehabilitation. Canadian Memorial College of Chiropractic, 1996

Chiropractic Rehabilitation, Deficits in Cerebellar Function: Vestibular System Disturbances, Unilateral Vestibular Lesion, Benign Paroxysmal Positional Vertigo, Bilateral Vestibular Deficit, Deficits due to Cervical Spine, Central Balance Deficits, Vertebral Artery Syndrome, Psychogenic Vertigo. Extrapyramidal Deficits; Hypokinetic and Hyperkinetic Deficits, Bradykinesia, Akinesia, Rigidity, Tremor and Postural Deficits. Canadian Memorial College of Chiropractic, 1996

Chiropractic Rehabilitation, Influence of Function on Morphological Tissue Restructuring: Functional Changes in Soft Tissue, Motion Restrictions, Hypermobility, Change in Afferentation from Receptors, Motor Learning from Central Regulation, Overloading causing Tendonitis, Enthesopathy, Paratenonitis, Paratendinitis and Tenosynovitis. Post-Surgical Rehabilitation. Treatment Rehabilitation and Strategies. Canadian Memorial College of Chiropractic, 1996

Chiropractic Rehabilitation, Degenerative Joint Diseases: Primary OA, Secondary OA, Coxarthrosis, Gonarthrosis, Surgical Procedures, Rehabilitation following Arthroplasty. Traumatology of the Movement System; Contusion, Tendon Injury, Muscle Injury, Bone Injury Joint Injury, Treatment Options, Rehabilitation. Canadian Memorial College of Chiropractic, 1996

Chiropractic Roentgenology, Shoulder - Knee - Paraspinal Soft Tissue Findings: Shoulder Disorders, Shoulder Dislocations, Shoulder Fractures, Knee Disorders, Knee Dislocations, Knee Fractures, Abdominal Aortic Aneurysm Calcification in; Arteries, Prostate, Lymph Nodes, Gallstones, Urinary Calculi, Teratomas, Heart and Chest Studies, Pneumothorax, etc. Life Chiropractic College West, 1995

Chiropractic Roentgenology, Fractures of the Upper and Lower Extremities: Pott's Fracture, Jones, Calcaneal Fractures, Tibial Plateau, Patella, Toddler's, Fender Fractures. Radial Head Fractures, Supracondylar, Olecranon, Monteggia's, Colles', Bennett's, Smith's, Scaphoid, Gamekeeper's Thumb, etc. Palmer Chiropractic College, 1995

Chiropractic Roentgenology, Principals of Magnetic Resonance Imaging: Tendons and Muscles: Degeneration, Tenosynovitis, Tears, Subluxation/Dislocation, Indirect and Indirect Muscle Injury, Muscle Trauma. TMJ, Shoulder, Elbow, Wrist, Hand, Hip, Knee, Foot and Spine: Normal Anatomy, Tendon, Ligament, Nerve and Bone Injury both Traumatic and Non-Traumatic Palmer College of Chiropractic, 1995

Chiropractic Roentgenology, Chest Imaging: MRIography, Scintigraphy, Bronchography, Fluoroscopy. Radiographic Signs of Chest Disease: Rosette Pattern, Silhouette Sign, Atelectasis, Interstitial Disease, Calcifications, Alterations in Lung Volume, HRTC patterns of Airway Disease, Lung Disease, Congenital Malformations, etc. Palmer Chiropractic College, 1995

Chiropractic Rehabilitation, Functional and Neurologic Symptomology: Postural Stability, Stabilization, Reactibility, Disturbances. Gait Cycle, Typology of Gait Dysfunctions Neurological, Examination of Postural Stabilization and Postural Reactibility. Trigger Points, Muscular Disturbances, Myotatic Reflexes, Involuntary movements, Tremor, Spasm, Clonus, Fibrillar Twitches. Chorelic and Athenoid Hyperkensesis. Canadian Memorial College of Chiropractic, 1995

Chiropractic Rehabilitation, Neurologic Syndromology: Myasthenia Gravis, Lambert-Eaton Myasthenic Syndrome. Peripheral Nerve Deficits. Spinal Cord: Transverse (sudden/gradule) Cord Lesions, Pseudoparetic, Spastic, Mixed Cord Lesions. Conus Medularis, Cauda Equina, Posterior Cord. Cerebellar Syndrome, Flaccidity, Hypermetria, Diadochokinesia, Extrapramidal, Thalamic and Brain Stem Syndromes. Meningeal Irritation, Intracranial Hypotension and Ventricular Syndromes, etc. Canadian Memorial College of Chiropractic, 1995

Chiropractic Rehabilitation, Kinesiology and Clinical Examination of the Joint System: Kinesiology of the Spine, Thorax, Pelvis, Shoulder Girdle, Elbow Joint, Wrist, Hand, Hip, Knee, Lower leg and Foot. Canadian Memorial College of Chiropractic, 1995

Chiropractic Roentgenology, Lumbar Spine: Low Back Syndromes and their Related X-Ray Scanning Lines and Angles, Spondylolesthesis, Spondylolysis, Retrolesthesis, Block Vertabrae, Coronal and Sagittal Tropism, Lumbar Stenosis, Spina Bifida, Lumbosacral Transitional Vertebrae, Knife Clasp Deformity, Hemi and Butterfly Vertebrae, etc. Life Chiropractic College West, 1994

Chiropractic Roentgenology, Pelvic - Sacroilliac _ Hip Roentgenology: Hip Fractures, Stenton's Line, Protrusio Acetabuli, Osteitis Condensans Ilii, Osteitis Pubis, Sacroilliac Alterations, Congenital

Structural Faults, Ankylosing Spondylitis, Infections, Congenital Hip Displasia, Slipped Femoral Capital Epiphysis, Osteochondrosis, etc. Life Chiropractic College West, 1994

Chiropractic Roentgenology, Cervical Spine: Whiplash Syndromes and their Related X-Ray Scanning Lines and Angles, Whiplash Syndromes, Joints of Luschka, Posterior Joint Arthrosis, Basilar Impression, Klippel-Feil Syndrome, Cervical Ribs, Twelve Indirect Signs of Cervical Spine Trauma, Cervical Fractures, etc. Life Chiropractic College West, 1994

Chiropractic Roentgenology, Primary Characteristics and Sites: Benign vs. Malignant, Infection vs. Malignant, Osteoporosis, Paget's, Target Areas of Bone Disorders Life Chiropractic College West, CA, 1993

Chiropractic Roentgenology, Bone Tumors - Benign and Malignant: Bone Tumor Characteristics - Contrast between Benign and Malignant, Neoplasms, Metastatic Carcinoma, and Sarcoma. Life Chiropractic College West, 1993

Chiropractic Roentgenology, Arthritis and Osteochondrosis: Osteoarthritis, Infective Arthritis, Inflammatory Arthritis and Gout. Non-Articular Rheumatism. Legg-Calve-Perthes', Scheuermann's disease, Traumatic Epiphysitis, Osgood Schlatter's, Sever's Disease, Kohler's, Kienbock's Disease, etc. Life Chiropractic College West, 1993

Chiropractic Roentgenology, The Vertebral Motor Unit: Degeneration of Motion Segments, Effects of Subluxation, Vertebral Body Fractures, Congenital/Developmental/Pathological Vertebral Body Alterations, Schmorl's Nodes, Persistent Notochord, Bone-Within-A-Bone, Ivory Vertebrae, Ruptured Disc, Disc Bulge, Herniation, Circumferential Tears, etc. 1993

SCHOLARLY PRESENTATIONS

Donthineni, R., Haider, H., Junnila, R. (2023, March). Personal Injury Brain to Toe PowerPoint presented at the Seminar, Walnut Creek, CA.

Haider, H., Junnila, R. (2022, March). Admissible Advances in Traumatic Brain Injury Diagnostics PowerPoint presented at the Webinar, CA.

Junnila, R., Haider, H. (2021, January). Electroencephalography (EEG) and Event-Related Potentials in Traumatic Brain Injuries PowerPoint presented at the Seminar,

Busfield, B., Donthenini, R., Junnila, R. (2020, February). Orthopedic Trauma & Management in Personal Injury PowerPoint presented at the Seminar, Walnut Creek, CA.

Busfield, B., Donthineni, R., Owen, W. (2019, February). Diffusing Deceptive Defense Medicine PowerPoint presented at the CLE Seminar, Junnila, R.

Busfield , B., Junnila, R. (2016, June). Spinal MRI and Shoulder Surgical Procedures Seminar presented at the Brentwood, CA, Continuing Medical Educational Presenter, Accreditation Council for Continuing Medical Education (ACCME), Joint Providership with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences.

Busfield , B., Junnila, R. (2015, January). Spinal MRI Seminar presented at the Brentwood, CA, Continuing Medical Educational Presenter, Accreditation Council for Continuing Medical Education (ACCME), Joint Providership with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences.

Hart, J., Junnila, R. (2004, March). Anesthesia Assisted Traction and Fibrosis Procedures Including Manipulation Topics: Safety, Cost Effectiveness, MUA vs Laminectomy, Literature Review 1952-2002, Fibrosis of Repair, Techniques, Out Patient Surgical Center Protocols. presented at the Seminar, Sutter Occupational Sacramento, CA.

Junnila, R. (2001, October). Science of Manipulation, Chiropractic's Role in Modern Healthcare Topics Covered: The Neurophysiology of an Adjustment, Kinesiopathomechanics, Afferent and Efferent Neurophysiology, Fibrosis of Repair, Indications and Contraindications to Treatment, Disc Injury Types, Neurological Deficits, Myofascial Release, Protocols presented at the Seminar, Sutter Symposium, Vallejo, CA.

SELECTED TEACHING/INSTRUCTING/LECTURING/CONSULTING

Basic Spinal MRI Interpretation, Continuing Medical Educational Presenter, Accreditation Council for Continuing Medical Education (ACCME), Joint Providership with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Brentwod , CA, 2015-

Lecturer, Current Clinical Concepts in Chiropractic, Brentwood , CA, 2013- Present

Lecturer, Industrial Injury Prevention, CA, 2008- Present

Instructor, Anesthesia Assisted Traction and Fibrosis Procedures Including Manipulation, Sutter, Sacramento, CA, 2004-

SELECTED PUBLICATIONS

Loftus, R., Studin, M., Junnila, R. (2024). CAN A ROTATOR CUFF TEAR BE AGE DATED?. National Library of Medicine NIH,

Junnila, R. (2023). Incidental MRI Findings Change Chiropractic Treatment plan, Even With Thorough Medical History and Extensive Examination.

SELECTED ADVANCED EDUCATION

Event-Related Potential (ERP) and Quantitative EEG (qEEG) Testing Using the COGNISION® System Certification of Training, Cognision Systems., 2022.

Event-Related Potential (ERP) and Quantitative EEG (qEEG) Certification, Cognision., 2022.

Mini-Fellowship in Neuroradiology – MRI Spine, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences., Academy of Chiropractic Post-Doctoral Division, 2023.

Mini-Fellowship Musculoskeletal (MSK) Radiology, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences ., 2024.

Fellowship Primary Spine Care , State University of New York at Buffalo Jacobs School of Medicine ., in conjunction with the Cleveland University-Kansas City, 2024.

SELECTED HONORS AND AWARDS

Fellowship Primary Spine Care, State University of New York at Buffalo, Jacobs School of Medicine, Office of Continuing Medical Education, Cleveland University Kansas City, College of Chiropractic, and the Academy of Chiropractic, 2024

Platinum Clinical Excellence Award, 50+ Page Curriculum Vitae, Academy Of Chiropractic, 2023

Evaluation & Management Qualified , Cleveland University, Kansas City, 2022

MRI Interpretation Review Qualified, Cleveland University-Kansas City, Chiropractic and Health Sciences with courses recognized by the ACCME in conjunction with the State University of New York at Buffalo Jacobs School of Medicine, 2022

Trauma Qualified, Academy of Chiropractic and Cleveland University Chiropractic and Health Sciences, 2018

Spinal Biomechanical Engineering, University Buffalo Medical School and Cleveland College of Chiropractic, 2015

Manipulation Under Anesthesia, American Academy of Manual and Physical Medicine, 1998

Hospital Protocols, American Academy of Manual and Physical Medicine, 1998

Diagnosis, Treatment and Chiropractic Rehabilitation Common Spinal Disorders, Canadian Memorial Chiropractic College, 1997

Certified Industrial Injury Evaluation, International Chiropractic Association, 1997

SELECTED COMMUNITY SERVICE

Girls Soccer Coach, Walnut Creek, California, 2004 - 2008