Norman C. Adelkopf, DC

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SELECTED OCCUPATIONAL HISTORY

Clinic Director & Owner, Creative Natural Health, PLLC, Cooper City, Florida, 2015 – Present

Clinic Director & Owner, Embassy Lakes Accident and Injury Center, Cooper City, Florida, 2017 – Present

Director of Clinical Operations - 5 Offices, County Line Chiropractic Medical & Rehab, Miami, Florida, 2007 - 2015

Clinic Director - One Office, County Line Chiropractic Center, North Miami Beach, Florida, 2004 - 2007

Associate Doctor, County Line Chiropractic Center, Miami, Florida, 2002 - 2004

Service Sales Representative, ADC Telecommunications, Boca Raton, Florida, 2001 - 2002

Circuit Capacity Manager, BellSouth Telecommunications, Fort Lauderdale, Florida, 2000 - 2001

Technician, ADC Telecommunications, Boca Raton, Florida, 1998 - 2000.

Clinic Director & Owner, Norman C. Adelkopf, D.C., P.A., Davie, Florida, 1997 - 1998.

Associate Doctor, Weston Chiropractic, Weston, Florida, 1995 - 1996.

Internship, Broward Chiropractic Center, Inc, Lauderdale Lakes, Florida, 1994 - 1994.

EDUCATION AND LICENSURE

Doctor of Chiropractic, Licensed in the State of Florida, License # CH6937, 1995-Present

Doctorate of Chiropractic, Life College, School of Chiropractic, Marietta, Georgia, 1994

Internship, Broward Chiropractic Center, Fort Lauderdale, Florida, 1994 – 1994

National Board of Chiropractic Examiners, Part I, 1992

National Board of Chiropractic Examiners, Part II, 1992

National Board of Chiropractic Examiners, Part III, 1993

Bachelor Of Science in Biology, University of Bridgeport, Bridgeport, Connecticut, 1990

SELECTED CERTIFICATIONS AND QUALIFICATION

ImPACT Concussion (TBI) Testing Certified, 2023

Trauma Qualified, 2018

Primary Spine Care Qualified, 2018

SELECTED POST-GRADUATE EDUCATION, CERTIFICATIONS AND FELLOWSHIPS

Fellowship; Spinal Biomechanics and Trauma - Candidate, Present
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, 2026

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, 2026

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, 2026

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, 2026

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, 2026

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, 2026

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, 2026

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, 2026

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, 2026

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, 2026

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.* 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, 2026

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*. 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, 2026

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.* 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, 2026

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*. 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, 2026*

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*. 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, 2026

Neurology of Ligament Pathology- Normal Morphology and Tissue Damage, *Connective tissue morphology, embryology and wound repair as sequalae 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, PACE Approved for the Federation of Chiropractic Licensing Board, College of Chiropractic, Long Island, NY, 2026

Neurology of Ligament Pathology- Spinal Biomechanics and Disc Pathology, *Disc pathology as sequala 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, PACE Approved for the Federation of Chiropractic Licensing Board, College of Chiropractic, Long Island, NY, 2026

Neurology of Ligament Pathology- 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 homeostasis until tetanus ensues creating osseous changes under the effect of Wolff's Law.* Academy of Chiropractic, Post-Doctoral Division, PACE Approved for the Federation of Chiropractic Licensing Board, College of Chiropractic, Long Island, NY, 2026

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.* 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, 2026

Electrodiagnostics: 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*. 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, 2026

Electrodiagnostics: 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.* 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, 2026

Electrodiagnostics: 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.* 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, 2026

Electrodiagnostics: 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.* 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, 2026

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.* 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, 2026

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.* 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, 2026

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.* 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, 2026

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.* 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, 2026

Case Management, Spinal MRI and Documentation, Demonstrative Documentation of Disc Herniationand 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.* 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, 2026

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.* 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, 2026

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 malingerers, if applicable.* 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, 2026

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.* 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, 2026

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.* 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, 2026

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.* 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, 2026

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.* 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, 2026

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.* 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, 2026

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.* 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, 2026

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.* 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, 2026

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.* 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, 2026

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.* 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, 2026

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.* 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, 2026

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.* 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, 2026

MRI Spinal Anatomy. *Protocols and Disc Pathology, Normal anatomy of axial and sagittal views utilizing T1, T2, gradient and STIR sequences of imaging. Degeneration and annular fissures of discs in both trauma and non-trauma patients and the biochemical properties of joints in age dating pathology. Disc bulges from degenerative and sequela to osseous issues, herniation pathology and protrusion, extrusion, migrated and sequestered variations. Clinical scenarios as sequela to disc and pre-existing pathologies.* 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, 2026

MRI Spine Interpretation. *Herniated, bulged, extruded, protruded, sequestered and degenerative discs. The morphology of a pathological disc vs. normal morphology and the sequences required including T1, T2 and STIR for all spinal regions. Modic 1-2-3 changes detailed and the traumatic relationship*. 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, 2026

Spinal Biomechanics, Ligamentous Pathology and Treatment Planning - Primary Spine Care 18. *Understanding future trends in chiropractic and clinical record-keeping is essential for maintaining professional excellence and delivering high-quality patient care. As healthcare evolves with new technologies and reimbursement models, clinical documentation must adapt to remain effective and compliant. This module provides a structured, step-by-step guide to creating accurate clinical notes, covering their purpose, context, key elements, practical tips, and relevant legal considerations. Mastery of these skills supports both regulatory compliance and the highest standards of patient care.* 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, New York, 2025

MRI Spine Interpretation - Primary Spine Care 18. *Provided instruction in the interpretation of MRI sequences, including sagittal, axial, T1, T2, STIR, and proton density. Trained students to accurately identify vertebrae, spinal cord, discs, nerve roots, thecal sac, posterior longitudinal ligament, epidural veins, and fat saturation pulses. Emphasized recognition of common pathologies such as bulges, herniations, protrusions, extrusions, myelomalacia, cord edema, and Schmorl's nodes. Developed students' practical skills in applying MRI findings to clinical decision-making.* 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, New York, 2025

Connective Tissue and Biomechanical Pathology; Part 1 - Primary Spine Care 18. *This module covers the foundational principles of biomechanical lesions, starting with ligamentous pathology and extending to overall biomechanical dysfunction. Students will learn how ligament damage impacts spinal stability and joint function. The course explores the compensatory changes that develop into chronic biomechanical pathology. Emphasis is placed on the clinical relevance of these lesions for accurate diagnosis, effective treatment, and thorough documentation.* 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, New York, 2025

Connective Tissue and Biomechanical Pathology; Part 2 - Primary Spine Care 18. *This module examines the neurological impact of connective tissue injuries and biomechanical pathology. It highlights how structural damage can create effector organ dysfunction, leading to abnormal neurological signaling. The course traces the progression from localized tissue pathology to widespread central sensitization. Focus is placed on understanding the mechanisms that connect tissue injury to long-term neurological consequences.* 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, New York, 2025

Evidence-Based Age-Dating Herniated Discs - Primary Spine Care 18. *This module develops the essential skill of "Evidence-Based" age-dating for herniated discs and spinal trauma. Students will learn to combine imaging interpretation from X-ray, MRI, and other modalities with clinical insights into joint pathology. Emphasis is placed on applying this expertise in collaborative medical and medical-legal contexts. The course also underscores the importance of evidence-based reasoning in establishing accurate patient prognoses.* 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, New York, 2025

Spinal Biomechanics, Ligamentous Pathology and Treatment Planning - Primary Spine Care 18. This *module covers the diagnosis and management of ligament pathology in acute and chronic patients. It reviews the evidence-based physiology of ligament morphology, trauma mechanisms, and resulting compensatory spinal changes. A master-level analysis addresses ligament anatomy, vascularization, neurological innervation, and tissue repair, emphasizing clinical relevance. The course also explores how ligament pathology drives patho-neuro-biomechanical lesions and informs the mechanisms of chiropractic spinal adjustments.* 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, New York, 2025

Concussion mTBI-TBI and Stroke Triage - Primary Spine Care 18. This *module focuses on the screening and diagnosis of brain injuries, from concussion and mild traumatic brain injury (mTBI) to severe TBI and stroke. It emphasizes recognizing key clinical signs to support timely and accurate assessment. Participants learn essential triage protocols to ensure patients receive appropriate care. The course also introduces evidence-based strategies for distinguishing between conditions and minimizing the risk of delayed or missed diagnoses.* 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, New York, 2025

Evidence on Making Non-Specific Back Pain Specific - Primary Spine Care 18. *This course module provides an evidence-based framework for spinal diagnosis, focusing on accurate identification of specific pathologies rather than generalized labels like "non-specific back pain." Clinicians are trained to integrate clinical assessment and imaging findings to establish definitive diagnoses. The module emphasizes collaborative management with medical specialists to improve patient outcomes. Participants learn to apply evidence-based reasoning to guide treatment decisions and strengthen interdisciplinary care.* 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, New York, 2025

Documentation Requirements that Support Necessary Long-Term Chiropractic Care and Foster Collaborative Relationships - Primary Spine Care 18. *This course module outlines the documentation requirements essential for supporting long-term chiropractic care and fostering collaborative relationships. It provides an evidence-based framework for spinal diagnosis, emphasizing precise identification of specific pathologies over broad labels such as "non-specific back pain." Clinicians are trained to synthesize clinical assessments with imaging findings to establish accurate and definitive diagnoses. The module highlights strategies for collaborative management with medical specialists to optimize patient outcomes. Participants learn to apply evidence-based reasoning to guide treatment decisions while enhancing interdisciplinary communication and care coordination*. 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, New York, 2025

ImPACT Testing Certification to Evaluate Concussion and TBI. *Has learned the ImPACT testing process and how to interpret the results, as well as the best practices for concussion assessment and management. As gained an understanding of the importance of proper return-to-activity decisions, and the long-term effects of concussions. Proficient in administering and interpreting ImPACT testing. Developed confidence to make informed decisions when assessing and managing concussions.* ImPACT Applications, Inc a Riverside Insights® company, Coralville, Iowa, 2023

Anatomy & Biomechanics of the Sacroiliac Joint - Spine Management Grand Rounds Internet Live and recorded Regularly Scheduled Series: *Review of the anatomical structure of the sacroiliac joint was presented including ligamentous and cartilaginous components. Mechanical movement and restrictions were discussed and correlated to the surrounding anatomy. Review of causes of the sacroiliac joint as a source of pain was outlined. Differences in boney structure including cortical bone thickness and muscular overlay were detailed. Differentiation of different ligaments supporting the sacroiliac joint and the primary restraint of anatomical movement was presented including the posterior, sacrotuberous, sacrospinous, anterior, interosseus and iliolumbar ligaments.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences – 2023

Prostate Cancer Mimicking Hip Pain - Chiropractic Management - Spine Management Grand Rounds Internet Live and Recorded Regularly Scheduled Series: *Outline of a patient presenting with hip pain to a chiropractic clinic was presented. A complete history of non-response to conservative interventions was detailed. Failure of non-steroidal anti-inflammatory medication, physiotherapy and acupuncture was discussed. Further workup including the ordering of plain film radiography and advanced imaging was presented with detailed clinic and scientific rationale. Emphasis was placed on nine other similar cases published in the literature with the patient having no prior history of cancer or boney metastasis prior to evaluation in the chiropractic office. Review of processes pertaining to patient history taking, physical examination, response to past care and utilization of imaging modalities to arrive at an accurate diagnosis was underscored.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences – 2023

Chiropractic Utilization of X-ray in Clinical Practice - Spine Management Grand Rounds Internet Live and Recorded Regularly Scheduled Series: *Review of field doctor response statistics regarding utilization of x-ray in clinical practice was presented. Guest author was interviewed outlining the basis and rationale for the academic paper reviewed. Discussion surrounding the use of x-ray for both anatomical contraindications to care (red flags) and assessment of biomechanical parameters was presented. Literature supporting the conservative co-management of spinal biomechanical abnormalities within the greater healthcare system was emphasized. Evidence based practice was outlined with particular focus on the utilization of x-ray in the management of the chiropractic patient.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences – 2023

Chiropractic Management Post C1-2 Fusion - Spine Management Grand Rounds Internet Live and Recorded Regularly Scheduled Series: *Detailed review of upper cervical anatomy and spinal biomechanics was reviewed. Specific attention to upper cervical ligamentous attachments and histological descriptions was given. Review of clinical indicators for upper cervical spine fusion and predominant patient population was outlined. Emphasis was placed on concomitant diagnosis of structural and biomechanical sources of spine pain. Interprofessional communication pathways were reviewed. Evidence based approach to post-surgical care was presented focused on physician experience, published literature and patient response. Outline of a systemized approach to the diagnosis and management of the patient with post-surgical upper cervical fusion was presented and discussed.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences – 2023

Spinal Degeneration – Facet Capsule and Intervertebral Disc Relationship - Spine Management Grand Rounds Internet Live and Recorded Regularly Scheduled Series: *Detailed review of the Pfirrmann Scale utilization in the documentation of intervertebral disc degeneration was presented. Correlation to the Fujiwara Scale of facet joint degeneration was explained and outlined. Overview of inter and intra-rater reliability of both grading systems was presented. Anisotropy of spinal ligaments was detailed and presented in relation to progressive grades of spinal degeneration with correlation to spinal injury. Review of alternation of motion segment integrity was given and correlated to both Fujiwara and Pfirrmann grading systems with specific focus on the supraspinous, interspinous and facet capsular ligaments with particular attention paid to traumatic spinal injury*. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences– 2023

Spine Care Management – The power of TEAMS - Spine Management Grand Rounds Internet Live and Recorded Regularly Scheduled Series: *Outline an overview of a multi modal approach to spine care with a particular focus on the negative effects of siloed care. Discussion of the impact of social, individual, and behavioral factors and their influence on spinal care plans was presented. Specific attention was paid to risk factors associated with persistent spine pain and non-response to care including psychological, nociceptive processing, specific tissue pathology and biomechanical. Discussion related to health literacy of spine pain patients was emphasized with specific action steps to educate injured patients. Review of the role of the Spine Management Physician™ in clinical practice was presented and their influence on the diagnosis and management of the spine pain patient was outlined.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences, Office of Continuing Medical Education – 2023

Chiropractic Adjustment, Brain Function and Chronic Pain - Spine Management Grand Rounds Internet Live and Recorded Regularly Scheduled Series: *Review of the definition of pain described as a multidimensional distressing experience composed of sensory, emotional, cognitive, and social components associated with actual or perceived tissue damage was presented. Analgesic effects of the chiropractic spinal adjustment were presented in the context of pain perception and occurrence was detailed. Pain lasting more than 3 months, at least on episode per week and associated with unpleasant emotions defined as chronic was reviewed. Influences of the chiropractic spinal adjustment on peripheral nerves, regional biomechanics and the central nervous system including brain function was detailed and explained.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences Office of Continuing Medical Education – 2023

Histology of Ligament Injury and Wound Repair - Chiropractic Case Management - Clinical Grand Rounds: *Review and outline of building blocks of ligaments and tendons was presented, specific focus on collagen, elastin, ligamentocytes/tenocytes, and proteoglycans. Outline of changes to ligament histology due to pathological mechanical stress was presented in detail. Phases of ligament repair were discussed including inflammatory, remodeling and proliferation. Ligamentous scaring was presented with specific focus on inflammatory cytokines and inability of injured ligaments to resemble pre-injury histological structure was applied.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences – 2023

Multiple Spine Injuries - Chiropractic Management - Grand Rounds: *Analysis of patients presenting with multiple spinal injuries post trauma was presented. Overview of ligamentous, intervertebral disc and cartilage injuries was reviewed. Discussion of clinical symptoms and correlation to objectified injury was discussed. Interprofessional collaboration with emphasis on clinical indications for the chiropractic adjustment, need for medical specialist referral, necessity of advanced imaging modalities such as MRI/CT and course of care was outlined and reviewed. Hallmark signs of ligamentous injury such as mid-line tenderness was detailed.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences – 2023

Lumbar Intervertebral Disc Extrusion - Chiropractic Management - Grand Rounds: *Analysis and review of T1, T2 and STIR MRI images with specific discussion on the presence of inflammatory fluid and migration of intervertebral disc material. Communication with spine surgeon was emphasized with particular focus on verbal reporting and clinical documentation. Interprofessional communication pitfalls were outlined and presented. Medical necessity of advanced imaging was presented with clinical correlation of orthopedic and neurological examination findings was detailed.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences, 2023.

MRI Cervical Spine - Axial Anatomy - Chiropractic Management - Grand Rounds: *Detailed review of anatomical structures on the axial slices of cervical spine MRI were presented. Musculature presented included sternocleidomastoid, splenius cervicis, splenius capitus, logus capitus, longus colli and semispinalis capitis in both the T1 and T2 axial sequences. Traversing vs exiting spinal nerves were contrasted and compared to cervical spine. Neurological structures such as the spinal cord, ventral and dorsal nerve roots were identified. Visualization and discussion of benefit of T2 axial sequences in the identification of facet joint pathology was presented. Emphasis was placed on the structure and morphology of the intervertebral disc and spinal ligaments including anterior longitudinal ligament, posterior longitudinal ligament, facet capsule, interspinous, supraspinous, intertransverse and alar ligaments were detailed.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences, 2022.

CT Lumbar Spine Anatomy - Chiropractic Management - Grand Rounds: *Detailed review of anatomical structures in the axial, sagittal and coronal planes of CT of the lumbar spine. Musculature presented included gluteus medius, psoas major, multifidus, iliacus, lumbar paraspinals and quadratus lumborum in both the T1 and T2 axial sequences. Emphasis was placed on the structure and morphology of the hard tissues of the spine with particular focus on the facet joints and pars interarticularis. Location and anatomical structure of the sacroiliac joint was presented and discussed.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards - PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences, 2022.

MRI Lumbar Spine - Axial Anatomy - Chiropractic Management: Grand Rounds - *Detailed review of anatomical structures on the axial slices of lumbar spine MRI were presented. Musculature presented included gluteus medius, psoas major, multifidus, iliacus, lumbar paraspinals and quadratus lumborum in both the T1 and T2 axial sequences. Traversing vs exiting spinal nerves were contrasted and compared to cervical spine. Neurological structures such as conus medullaris, cauda equina, filum terminale, ventral and dorsal nerve roots were identified. Visualization and discussion of benefit of T2 axial sequences in the identification of facet joint pathology was presented. Emphasis was placed on the structure and morphology of the intervertebral disc and spinal ligaments including anterior longitudinal ligament, posterior longitudinal ligament, facet capsule, interspinous, supraspinous, intertransverse and iliolumbar were detailed. Location and anatomical structure of the sacroiliac joint was presented and discussed.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards–PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences, 2022.

Indications and Absolute/Relative Contraindications to Chiropractic Care - Grand Rounds: *Review of inclusion criteria accompanying modification of chiropractic treatment plan due to an absolute or relative contraindication to chiropractic care. Examples of clinical rationale, physical examination findings and proper diagnoses were provided. Review of the definitions of both relative and absolute contraindications to chiropractic care, specific details on referral to medical specialty were provided. Analysis of regional contraindications and treatment in adjacent regions were provided and discussed. The keys to understanding indications to care were detailed including the patient interview, review of medical records, diagnosis, and spinal examination findings. Review of most common reasons for chiropractic license violations were presented including application of the chiropractic adjustment to a contraindicated condition, failing to refer in the presence of a contraindication, failure to properly evaluate the patient to determine if a contraindication is present and failing to properly document the patient encounter.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards - PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences, Lehi, UT - 2022.

X-Ray Dosage, Sagittal Balance and Surgery Success Rates: Clinical Grand Rounds: *Discussion related to millisievert and cumulative effective dose was presented. Outline of the definition and research process of achieving Minimal Clinical Important Difference in spine surgery was discussed. CED levels below 100mSv was reviewed and compared to patients receiving multiple plain film radiographs. Discussion and relation of spinal biomechanics, sagittal balance, utilization of spine radiographs and MRI to working with the neurosurgeon was outlined.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards - PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences, Lehi, UT - 2022

Intervertebral Disc Nomenclature and Morphology: Clinical Grand Rounds - *Discussion of intravertebral disc morphology was presented and reviewed. Correlation between morphological and ideological findings was presented. Detailed review of spondylosis deformans, intravertebral osteochondrosis, intravertebral disc herniation and bulge was outlined. Specific detail was placed on changes in disc morphology due to ligament injury in the human spine. Clinical correlation of disc herniation versus disc bulge was presented. Overview and detailed analysis of types of annular tearing in the desk was presented with an emphasis on the delineation between clinical findings and findings on advanced imaging.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences, Lehi, UT - 2022.

Trial Testimony and the Spine Management Patient: Clinical Grand Rounds - *Discussion and presentation of the trial process and requirements of both the treating physician and expert physician was outlined. Emphasis was placed on detailed preparation of case flow and objective demonstrable findings. Review of courtroom proceedings including witness and expert testimony was included. Expert versus treating physician requirements were presented. Emphasis was placed on thorough evaluation and narrative reporting processes to prepare for court room questioning. Specific review of illustration of demonstrative evidence was outlined.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences, Lehi, UT - 2022.

Degenerative versus Acute Intervertebral Disc Pathology - Clinical Grand Rounds: *Review of the scientific and validated process for evaluating degenerative disc disease in the human spine was reviewed. Detailed analysis of differentiating between acute and chronic changes was emphasized. Overview and discussion of advanced imaging as well as plain film radiographs with dynamic views was presented. Review in detail of the Pfirrmann scale and it's association with intravertebral disc degeneration was presented including all Pfirrmann grades with illustrative reference.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences, Lehi, UT - 2022.

Role of Diagnostic Injections in Spinal Disorders - Chiropractic Spine Management - Clinical Grand Rounds: *Review and discussion of objective data derived from ordering diagnostic spinal injections. Patient triage in relation to facet joint injury, ligament laxity, radiculopathy, herniation of the intervertebral disc and sacroiliitis was outlined. Patient injury data from physical examination, provocative testing and diagnostic imaging was correlated clinically with response to diagnostic block after appropriate referral to medical specialty. The sacroiliac joint as an underdiagnosed source of chronic lower back pain was outlined. Review of gold standard for diagnosis of sacroiliitis, fluoroscopy-guided block was presented.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards - PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences, Lehi, UT - 2022.

MRI Sequences and Imaging Acquisition - Chiropractic Spine Management - Clinical Grand Rounds: *Detailed discussion of MRI physics and imaging acquisition sequences in clinical practice. Thorough review of image intensity definitions and the correlation to tissue type including nerve, cerebral spinal fluid, muscle, bone, ligament, and tendon. Overview of fat suppression techniques including STIR and FLARE utilization and clinical necessity. Discussion of sequence categories including Proton Density, T1, T2 and Diffusion Weighted was presented. Overview of Flow Sensitive sequences was briefly presented. Spine Echo (SE), Gradient Echo (GE), Inversion Recovery (IR) and Echoplanar Imaging (EPI) were outlined and contrasted in clinical context. Requirements for MRI examination were reviewed. Updated information was presented on MERGE imaging in the cervical spine.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences - 2022.

Pain Categorization - Chiropractic Spine Management - Clinical Grand Rounds: *Review of published categorization of pain generation by the International Association for the Study of Pain including nociceptive, neuropathic and nociplastic sources. Discussion on the history and relevance of the Delphi process of conducting consensus-based research was presented. Origins of nociceptive, neuropathy and nociplastic sources of pain was outlined including non-neural tissue, the somatosensory nervous system as well as the categorization of pain syndromes with non-specific findings on physical examination and imaging studies. Review of the importance of quantitative testing, clinical examination and clinical correlation was presented and related to the academic approach to the categorization of pain.* Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences - 2022.

Atlanto-Axial Pannus with and Without Rheumatoid Arthritis - Clinical Grand Rounds - *detailed overview of the anatomy and mechanics of the Atlanto-axial space in both diagrams and MRI studies. Overview of the clinical and laboratory diagnosis of rheumatoid arthritis and MRI as the imaging modality of choice for pannus formation in the upper cervical spine. Discussion on pannus formation being more common in non-rheumatoid arthritis patients. Overview of theories relating pannus formation to spinal instability at the C1-2 joint and identification of pannus as a common trait in the elderly.* Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences - 2022.

Head and Neck Trauma - Chiropractic Management - Clinical Grand Rounds: *Review of types of tissue injured in head and neck trauma including muscle, nerve, intervertebral disc, ligament, spinal cord, vertebral body, artery, or vein was presented. Clinical correlation of mechanism of injury, patient history, subjective complaint, physical examination, advanced imaging findings and electrodiagnostic testing was emphasized. Interprofessional communication and review of any diagnostic dilemmas was reviewed. Spinal compressive radiculopathy versus acute nerve injury without prolonged compression was presented. Differential diagnosis between ligament, intervertebral disc and nerve pathology was outlined in depth and presented. Emphasis was presented on spinal nerve manifestations of ligament injury in the cervical spine.* Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences - 2022.

Multiple Sclerosis Patient – Chiropractic Management - Clinical Grand Rounds – *review of prodromal symptoms relating to the typical presentation of the multiple sclerosis patient as a novel update in clinical diagnosis. Recognition of subtle symptoms was emphasized. Multiple sclerosis as the leading cause of neurological disability in young adults was outlined and the importance of early recognition and prompt intervention. Overview of prodromal symptom trends occurring years before full symptoms appear and emphasis was placed on the Doctor of Chiropractic as a front-line provider it their recognition, clinical referral pathways were discussed.* Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences - 2022.

Carotid Space - Chiropractic Management - Clinical Grand Rounds: *Outline and discussion of the anatomical boundaries of the carotid space was presented. Review of the aortic arch, brachiocephalic trunk, common carotid, carotid bifurcation, internal carotid, external carotid, Circle of Willis, and vertebral artery pathways was demonstrated. Review of correlation of patient history, physical examination and findings on advanced imaging was presented. Clinical review of dysphagia and odynophagia were presented and discussed clinically in the context of the physical examination and patient pain patterns. Vascular anomalies and their general asymptomatic presentation were emphasized. Etiology of arterial dissections was outlined with emphasis on differentiating spontaneous versus traumatic characterization. Advanced imaging of carotid space pathology was presented with catheter angiography demonstrated as the gold standard.* Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences - 2022

Medical and Interprofessional Communication – *Detailed overview of medial legal communication in relation to patient subjective and objective clinical findings. Outline of direct and cross-examination techniques were presented. Overview of Voir Dire and Daubert hearings were outlined. Discussion of examination of proof in relation to causality, bodily injury, and persistent functional losses was reviewed. Court testimony flow, professional expectations, and court room etiquette was presented and emphasized.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City, College of Chiropractic – Ft. Lauderdale, Florida 2022.

Spine Management – *discussion and outline of case management workflows related to the management of acute and chronic spine pain with a particular focus on pain of traumatic origin. Evidence-Based communication and Electronic Health Record processes were emphasized and presented. Patient management and triage based on patient history, physical examination and imaging findings was outlined. Overview of interprofessional referral options including physical therapy, interventional pain management and spine surgery was discussed in detail. Spine Management as concept was discussed by Dr. John Edwards, neurosurgeon in relation to reducing escalation of non-urgent cases as well as creating space for patients with urgent need.*
National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City, College of Chiropractic – Ft. Lauderdale, Florida 2022.

Documentation and Communication in Spine Management – *presentation of compliant healthcare documentation including E/M initial and re-evaluations, daily progress notes and medical-legal narrative reports was provided. Workflows detailing interprofessional referral language, advanced imaging requests and patient communication were detailed. Streamlined processes for creating and maintaining compliant, evidence based, patient centered clinical reporting was given. Emphasis was placed on the role of a Spine Management Physician in the processes of interprofessional communication and case management.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City, College of Chiropractic – Ft. Lauderdale, Florida 2022.

Histology and Physical Tolerance of Spinal Ligaments – *presentation of the histological structural organization of spinal ligaments including analysis of tropocollagen as the basis for anatomical structure. Review of the structural hierarchy of the spinal ligament from microscopic to macroscopic was included. Anisotropic properties of spinal ligaments were defined, and examples presented. Detailed review of spinal entheses was presented with emphasis on advanced imaging and chronic enthesopathy. New insights into the pathogenesis, diagnostic modalities, and treatment of spinal enthesitis was outlined and presented. Specific focus was on traumatic injury to the spinal entheses and the difference in formation of spinal osteophytes and enthesophytes. Biomechanics of the degenerative spine was detailed and reviewed in terms of clinical spine management.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City, College of Chiropractic – Ft. Lauderdale, Florida 2022.

Accident Reconstruction and Expert Reporting – *Crash dynamics and basic physics formulas were presented and detailed. Review of biomechanical expert reports and included mathematics was discussed with context given to data collection and accuracy. Spinal injury thresholds were reviewed as well as the Law of Conservation of Energy and its relationship to crash dynamics. Specific mathematical examples were presented including workflows to review the accuracy of biomechanical expert reporting and mathematical formulas.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City, College of Chiropractic – Ft. Lauderdale, Florida 2022.

Degenerative versus Acute Ligament Laxity – *an updated scientifically validated grading system for the identification of degeneration of the intervertebral disc and motion segment was presented. Details such as radiographic signs of disc degeneration including loss of disc height, osteophyte formation and diffuse sclerosis were provided. Grading examples were provided in radiographic and gross specimen form starting with Grade 0 (no degeneration) to Grade 3 (severe degeneration). Outline of the validity and interobserver agreement of this grading system was shown for both the cervical and the lumbar spine. Review and emphasis on the difference between osteophyte formation and enthesophytes was again outlined.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City, College of Chiropractic – Ft. Lauderdale, Florida 2022.

Chiropractic Science Research – *review and presentation of updated peer-reviewed medically indexed research supporting chiropractic management of spine pain was detailed. Timeline of publication was emphasized with three years being the maximum timeframe for up-to-date data. Comprehensive review of evidence supporting chiropractic management of the spine pain patient in the Pain Management, Corrective, and the Health Maintenance Phases of care. Methods to communicate this evidence to the medical and legal communities was presented in the context of compliant patient centered clinical documentation. Efficiency of a Spine Management Physician versus conventional primary care was presented. Emphasis on the hierarchy of published evidence starting with Foundational Evidence up to Level 1 evidence was presented.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City, College of Chiropractic – Ft. Lauderdale, Florida - 2022

Spinal Biomechanical Engineering and Sagittal Balance of the Spine - Clinical Grand Rounds - *discussion of spine care in terms of engineering principles was presented. Biomechanical parameters such as pelvic incidence, sacral slope, pelvic tilt, and sagittal balance were outlined and presented. Spinal curvature and load distribution was presented mathematically and outlined using full spine plain film radiography. Comparative anatomy between primates and humans as well as humans of different ages was presented as examples of spinal compensation. Spinal rehabilitative principles were provided in group discussion.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences - 2022.

Chiropractic Management of a L5-S1 Lumbar Disc Extrusion - Clinical Grand Rounds: *Review of objective muscle weakness as the primary indication for surgical interventions in patients with intervertebral disc herniations and extrusions was presented. Discussion of parameters for physical examination findings to warrant ordering advanced imaging and surgical consultation. Overview of rationale for evaluation of spinal central canal in patients with abnormal neurological findings was reviewed. Duties of a Spine Management Physician ™ in the diagnosis and co-management of patients with intervertebral disc extrusions was outlined. Clinical correlation and coordination of care was detailed including timing of advanced imaging order and surgical referrals.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences - 2022.

Chiropractic Management of Upper Extremity Neurologic Deficits and Pre-existing Intervertebral Disc Pathology - Clinical Grand Rounds: *Review of objectification of neurological deficits including loss of sensation, aberrant deep tendon reflexes, loss of strength and the presence of pathological reflexes was presented and discussed. Criteria for co-management in the presence of neurological deficits with the pain management physician and the spine surgeon was outlined. Detailed presentation on CPT coding and E/M documentation requires was discussed and reviewed. Absolute and relative contraindications to chiropractic care was demonstrated and outlined.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences - 2022.

Chiropractic Management of Surgical Disc Herniation - *Outline of inter and intra-rater reliability was presented and discussed in relation to radiological interpretation of spine MRI films. Short Tau Inversion Recovery (STIR) imaging was presented and contrasted to FLARE, T1 and T2 weighted imaging on MRI. Signal intensity relating to MRI documented Modic changes was presented in both T1, T2 and STIR images. Physical examination for spine pain was discussed with pre and post-surgical triage protocols identified and outlined.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences - 2022

Chiropractic Diagnosis and Management of the Pre-Surgical Patient - Clinical Grand Rounds - *outline and analysis of spinal biomechanical parameters in a whole spine model of care. Review of the details of measuring Pelvic Incidence and discussion of history of its analysis. Outline of movement from a regional model of spine care to a full spine model was presented. Analysis of the components of the pre-surgical patient including muscle movement patterns, segmental mobility, spinal curvature and rotation in the coronal, sagittal and axial planes was presented.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards - PACE. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences – 2021.

Spine Management Clinical Workflows – *in-depth review and discussion of the Doctor of Chiropractic as a Spine Management Physician with specific focus on the diagnosis and management of spine pain of mechanical origin. Details were outlined in relation to triage of anatomical causes of spine pain such as fracture, tumor, infection.* National Spine Management Group, Cleveland University Kansas City, Chiropractic and Health Sciences, Federation of Chiropractic Licensing Boards, 2021.

Pain Management and the Chiropractic Adjustment – *Current peer reviewed indexed research demonstrating the chiropractic adjustment's effect on the central nervous system and pain threshold was outlined and reviewed. Anatomical review and contemporary supportive research were discussed. Details of central nervous system response to the chiropractic adjustment was reviewed and demonstrated.* National Spine Management Group, Cleveland University Kansas City, Chiropractic and Health Sciences, Federation of Chiropractic Licensing - 2021.

Corrective Spinal Care and Chiropractic Case Management - *Current peer reviewed indexed research demonstrating the chiropractic adjustment's effect on the biomechanical structure of the human spine during the corrective/rehabilitative phase of care. Basic outline of biomechanical parameters in symptomatic and asymptomatic patients was reviewed with particular focus on pathobiomechanics in chiropractic practice.* National Spine Management Group, Cleveland University Kansas City, Chiropractic and Health Sciences, Federation of Chiropractic Licensing Boards, 2021.

Health Maintenance Care and Chiropractic Case Management - *Current peer reviewed indexed research demonstrating the chiropractic adjustment's effect on the maintenance of the human spine. Details of indexed research reviewing Chiropractic's role in the reduction of narcotic utilization and decreased absenteeism from work due to disability. Communicating Health Maintenance Care to the medical profession and the public was emphasized.* National Spine Management Group, Cleveland University Kansas City, Chiropractic and Health Sciences, Federation of Chiropractic Licensing Boards - 2021.

Evidence Based Clinical Reporting – *overview of current CPT and ICD-10 coding guidelines pertaining to the evaluation and management of spine pain patients was presented. Timed codes, relevant diagnosis related to injured tissue was presented. Specific discussion of proper format of the Assessment portion of clinical documentation was presented. Review of the difference between daily progress notes and Evaluation and Management [E/M] reporting was provided.* National Spine Management Group, Cleveland University Kansas City, Chiropractic and Health Sciences, Federation of Chiropractic Licensing Boards - 2021.

Cervical Spine Clinical Workflows – *detailed review of workflows of a thorough patient history and identification of clinical red flags related to relative and absolute contraindications to chiropractic care was presented. Outline of neurological examination including pathological reflexes present during spinal cord compression, cervical stenosis and cervical myelomalacia was discussed. Normal vs abnormal measurement of range of motion objectifying spinal dysfunction was presented. Specific orthopedic testing related to specific muscle, nerve or intervertebral disc injury was discussed. Review of interprofessional triage and imaging decision tree was outlined with specific focus on the pain management physician and spinal surgeon.* National Spine Management Group, Cleveland University Kansas City, Chiropractic and Health Sciences, Federation of Chiropractic Licensing Boards - 2021.

Lumbar Spine Clinical Workflows - *detailed review of workflows of a thorough patient history and identification of clinical red flags related to relative and absolute contraindications to chiropractic care was presented. Outline of neurological examination including pathological reflexes present during cervical and lumbar stenosis was discussed. Normal vs abnormal measurement of range of motion objectifying spinal dysfunction was presented. Specific orthopedic testing related to muscle, nerve or intervertebral disc injury was discussed. Review of interprofessional triage and imaging decision tree was outlined with specific focus on the pain management physician and spinal surgeon.* National Spine Management Group, Cleveland University Kansas City, Chiropractic and Health Sciences, Federation of Chiropractic Licensing Boards - 2021.

Interprofessional Clinical Documentation for the Primary Care Physician – *contemporary techniques to best communicate chiropractic care to the Primary Care Physician was discussed and presented. Analysis of the depth and scope of communication was emphasized with direct focus on the proper documentation management system including demographic sheet, imaging reports, most recent evaluation and management reports. Discussion of appropriate timing for phone consultation was presented.* National Spine Management Group, Cleveland University Kansas City, Chiropractic and Health Sciences, Federation of Chiropractic Licensing Boards, 2021.

Clinical Documentation for the Spine Surgeon - *contemporary techniques to best communicate chiropractic care to the spine surgeon was discussed and presented. Analysis of the depth and scope of communication was emphasized with direct focus on the proper documentation management system including demographic sheet, imaging reports, most recent evaluation and management reports. Discussion of appropriate timing for phone consultation was presented.* National Spine Management Group, Cleveland University Kansas City, Chiropractic and Health Sciences, Federation of Chiropractic Licensing Boards, 2021.

Clinical Documentation for the Pain Management Physician - *contemporary techniques to best communicate chiropractic care to the pain management physician was discussed and presented. Analysis of the depth and scope of communication was emphasized with direct focus on the proper documentation management system including demographic sheet, imaging reports, most recent evaluation and management reports. Discussion of appropriate timing for phone consultation was presented.* National Spine Management Group, Cleveland University Kansas City, Chiropractic and Health Sciences, Federation of Chiropractic Licensing Boards, 2021.

Clinical Documentation for Attorney - *contemporary techniques to best communicate chiropractic care and permanent injury to the personal injury attorney was discussed and presented. Analysis of the depth and scope of communication was emphasized with direct focus on the proper documentation management system including diagnosis, response to treatment, causality and persistent functional loss was outlined. Discussion of appropriate timing for phone consultation was presented.* National Spine Management Group, Cleveland University Kansas City, Chiropractic and Health Sciences, Federation of Chiropractic Licensing Boards, 2021.

Spinal Biomechanical Engineering – *detailed presentation of the progression of laboratory-based biomechanics into the clinical realm was outlined. Evidence based review of Pelvic Incidence and other sagittal balance parameters was presented. Regional sagittal balance and communication with the spine surgeon in the spine management practice was reviewed. Specific discussions were related to spinal sagittal balance and the non-surgical spine pain patient and correlated to the Corrective Care Phase of Chiropractic Care. Outline of the future of full spine biomechanical modeling was presented in relation to symptomatic and asymptomatic patients.* National Spine Management Group, Cleveland University Kansas City, Chiropractic and Health Sciences, Federation of Chiropractic Licensing Boards, 2021.

Objectifying the Biomechanical Spine Lesion – *review of ligament laxity and alternation of motion segment integrity was presented with specific correlation to the AMA Guides to the Evaluation of Permanent Impairment 5th and 6th Education. Correlation to bodily injury, causality and persistent functional losses in the personal injury patient and communication with the attorney was outlined. Attention was paid to the differences between vertebral body translation and angular motion deficits between adjacent motor units was presented. Specific details on measurement tools and analysis of the injured cervical and lumbar spines were discussed.* National Spine Management Group, Cleveland University Kansas City, Chiropractic and Health Sciences, Federation of Chiropractic Licensing Boards, 2021.

Spinal Biomechanics, Thoracolumbar Deformity and Surgical Outcomes - Clinical Grand Rounds – *full spine analysis, adjacent spinal biomechanics and its impact on surgical outcomes. Sagittal alignment pelvis to cervical spine and association with kyphosis and lordosis mechanical positioning.* National Spine Management Group, Federation of Chiropractic Licensing Boards, Cleveland University College of Chiropractic, ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, Buffalo, NY - 2020.

Radiographic evolution of a Schmorl's node - Clinical Grand Rounds – *Acute Schmorl's node and progression to chronic stage comparison to serial MRI. Endplate fracture and acute presentation and correlation to clinical findings and pain patterns. Presentation in plain film radiograph and MRI images were compared and contrasted in both acute and chronic stages.* National Spine Management Group, Federation of Chiropractic Licensing Boards, Cleveland University College of Chiropractic, ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, Buffalo, NY - 2020.

Computerized Mensuration of Spinal Biomechanical Pathology; Primary Spine Care 8, *Understanding the algorithmic interpretation of spinal biomechanical pathology in a 3-D model and creating treatment plans, impairment ratings and teaching models based upon the vertebral motor unit angles. Determining sagittal and axial alignments in creating a normative baseline for treatment goals and outcomes.* Academy of Chiropractic Post-Doctoral Division, Long Island NY, 2019

Neurosurgical-Chiropractic Collaboration on Spinal Pathology; Primary Spine Care 8, *Utilizing x-ray, MRI and other modalities of advanced imaging in conjunction with spinal biomechanical failure and clinical evaluation to collaboratively create treatment protocols for patients in both the operative and non-operative cases. Determining the boundaries of scope of care for both the chiropractor and neurosurgeon based upon a definitive diagnosis of the mechanical vs. an anatomical lesion*. Academy of Chiropractic Post-Doctoral Division, Long Island NY, 2019

Documentation and Ethics in Medical-Legal Relationships; Primary Spine Care 8, *Creating ethical relationships based upon accurate documentation reflective of the casually related condition of the injured. Ensuring accepted credentials of the doctor based upon Voir Dire standards reflected in an admissible curriculum vitae. How to present demonstrative documentation in the courts reflective of the patient's pathology.* Academy of Chiropractic Post-Doctoral Division, Long Island NY, 2019

Coding, Documentation and Compliant Coding; Primary Spine Care 8, *Ensuring the correct codes are utilized in an evaluation and management encounter. The correct elements are utilized to support the level of E&M coded along with a self-audit program to ensure ethical billing occurs. Guidelines for history of present illness, primary complaint, review of systems, family, social and past histories are discussed and how to document the same.* Academy of Chiropractic Post-Doctoral Division, Long Island NY, 2019

Anatomical vs Mechanical Sources of Spine Pain in the Spine Pain Patient - Clinical Grand Rounds, *Case study presentation outlining risk factors for increased injury susceptibility including prior surgical fusion. Comparison between MRI and plain film radiographic objective data was outlined and presented. Importance of interprofessional communication and review of prior medical records. Analysis of spinal compression fracture and surgical hardware was outlined.* MDR Consulting, Buffalo, NY, 2019

Clinical Diagnosis and Interprofessional Management of Thoracic and Lumbar Post-Traumatic Compression Fractures Clinical - Clinical Grand Rounds, *A detailed review of physical examination and assessment of traumatic thoracic and lumbar spine fractures using plain film radiograph and CT scans with and without contrast. Detailed review of mechanism of injury, emergency department records and radiology reports were presented. Errors in fracture site, description and omission on plain film study by the radiologist were reviews. Analysis of potential spinal instability in the cervical spine was discussed and a detailed referral for computerized mensuration analysis was demonstrated.* Academy of Chiropractic, Post-Doctoral Division, Buffalo, NY, 2019.

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, Cleveland University- Kansas City, 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. Basics of MRI Spine Interpretation inclusive of all types of herniations and bulges.* Academy of Chiropractic Post-Doctoral Division, Cleveland University- Kansas City, Long Island, NY, 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 Post-Doctoral Division, Cleveland University- Kansas City, Long Island, NY, 2018.

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 Post-Doctoral Division, Cleveland University- Kansas City, Long Island, NY, 2018.

Credentials and Knowledge Base; Primary Spine Care 1, *The credentials and knowledge based from an academia perspective when cooperatively treating in a collaborative environment inclusive of understanding pathology and mechanical spine issues* Texas Chiropractic College Graduate Doctoral Program, PACE Recognized by The Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2018

Spinal Biomechanical Engineering and MRI Spine Interpretation; Primary Spine Care 1, *Integrating Spinal Biomechanical Engineering and MRI Spine Interpretation into a primary spine care model, inclusive of necessity and acquisition protocols. A comprehensive review the latest evidence in documenting mechanical issues* Texas Chiropractic College Graduate Doctoral Program, PACE Recognized by The Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2018

Hospital Administration, Triage, Clinical Requirements and Collaborative Relationships with Medical Specialists; Primary Spine Care 1, *Understanding hospital and medical specialist's care paths for mechanical spine pathology and integrating the doctor of chiropractic in the hospital and allopathic treatment protocols* Texas Chiropractic College Graduate Doctoral Program, PACE Recognized by The Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2018.

Contemporary Spine Research and Documentation; Primary Spine Care 1, *Central nervous system connection and the thalamus, hypothalamus connection in both ascending and descending central pathways with neuro-endocrine implications that have the mechanisms to be a component of Schizophrenia, Dementia and Alzheimer's with a linear relationship to the chiropractic spinal adjustment and chronic pain.* Texas Chiropractic College Graduate Doctoral Program, PACE Recognized by The Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2018.

Spinal Trauma Pathology; Primary Spine Care 2, *Morphology of healthy and traumatized connective tissue and the permanency implication of adhesions, spinal disc morphology in the healthy and pathological patient as sequela to trauma in relationship to bulges, herniations, protrusions, extrusions and sequestrations. Aberrant spinal biomechanics and negative sequela to trauma.* Texas Chiropractic College, Academy of Chiropractic, Setauket NY, 2018.

Utilizing Research in Trauma; Primary Spine Care 2, *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.* Texas Chiropractic College, Academy of Chiropractic, Setauket NY, 2018

Chiropractic Evidence; Primary Spine Care 2, *Analyzing segmental pathology, adjusting vs. mobilization with cervicogenic headaches, Opioid alternatives and case management of mechanical spine pain based upon outcome studies.* Texas Chiropractic College, Academy of Chiropractic, Setauket NY, 2018

Chiropractic Spinal Adjustment Central Nervous System Processing; Primary Spine Care 2, *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.* Texas Chiropractic College, Academy of Chiropractic, Setauket NY, 2018

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 Graduate Doctoral Program, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Boards, Long Island, NY, 2018

Spinal Biomechanical Engineering Analysis, *Understanding spinal motor units as it relates to the Cartesian system and normal vs. pathological movement. Analyzing normal coupling functions of the spine in relations to gait and pelvic biomechanical function and determining stress units and standards of deviation of segmental dysfunction. Interpreting mensuration lines and block analysis beyond standards of deviation in spinal motor dysfunction about connective tissue failure.* Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2018

Spinal Biomechanical Engineering Pathology and Clinical Application - *Integrating pathological function based upon the Cartesian system and digital mensuration in developing treatment plans with diagnosed connective tissue failures. Diagnosing corrective vs. clinical management scenarios when considering maximum medical improvement in both the chronic and acute, insidious and traumatically induced patient.* Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2018

Connective Tissue Pathology, Spinal Biomechanics as Sequela to Trauma, MRI Spine Interpretation, Ordering Protocols & Triaging the Injure, **Primary Spine Care 6,** *The latest research on the 6 ways to age-date disc herniations and bulges from trauma inclusive of disc pathology nomenclature. MRI ordering protocols, inclusive of Dixon format and fat-suppressed images. The neurology and pathology of connective tissue and the sequela of trauma at the biomechanical level leading to bio-neuro-mechanical failure. Contemporary "evidenced-based building blocks" for triaging and in a collaborative environment.* Cleveland University Kansas City, Chiropractic and Health Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island NY, 2018

Spinal Biomechanical Engineering Digitizing, Primary Spine Care 6, *Integrating automated mensuration into creating treatment plans and determining maximum medical improvement. A literature-based study of normal vs. abnormal motor until function. Determining ligamentous laxity, alteration of motion segment integrity and pathological stress units and whole person impairments based upon the literature and academic standards*, Cleveland University Kansas City, Chiropractic and Health Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island NY, 2018

Science of the Chiropractic Spinal Adjustment and Vertebral Subluxation, Primary Spine Care 6, *The literature-based definitions of both the mechanisms the chiropractic adjustment and how it affects the central nervous system in pain pathways and systemic issues that is the arbiter for normal vs. abnormal function. The "physiological mechanisms" of how the chiropractic spinal adjustment affects the peripheral and central nervous systems. Subluxation degeneration/Wolff's Law will be detailed from a literature perspective combined with the mechanism of subluxation (bio-neuro-mechanical lesion). A literature perspective why "long-term" chiropractic care is clinically indicated as usual and customary to effectuate demonstrable biomechanical changes in the spine. An evidenced-based perspective of why physical therapy is a poor choice for spine as a 1st referral option for any provider inclusive of the literature.* Cleveland University Kansas City, Chiropractic and Health Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island NY, 2018

Documentation, Collaboration, and Primary Spine Care, Primary Spine Care 6, *An academic basis for documentation that is usual and customary across professions in collaborative care. Maintaining ethical medical-legal relationships based upon Voir Dire and Daubert standards with ensuring a "4-corners" inclusive report. Ensuring Primary Care Status based upon academic standards.* Cleveland University Kansas City, Chiropractic and Health Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island NY, 2018

Neurodiagnostics, Imaging Protocols and Pathology of the Trauma Patient, *An in-depth understanding of the protocols in triaging and reporting the clinical findings of the trauma patient. Maintaining ethical relationships with the medical-legal community.* PACE Recognized by The Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2017.

Diagnostics, Risk Factors, Clinical Presentation and Triaging the Trauma Patient, *An extensive understanding of the injured with clinically coordinating the history, physical findings and when to integrate neurodiagnostics. An understanding on how to utilize emergency room records in creating an accurate diagnosis and the significance of "risk factors" in spinal injury.* PACE Recognized by The Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2017.

Crash Dynamics and Its Relationship to Causality, *An extensive understanding of the physics involved in the transference of energy from the bullet car to the target car. This includes G's of force, newtons, gravity, energy, skid marks, crumple zones, spring factors, event data recorder and the graphing of the movement of the vehicle before, during and after the crash. Determining the clinical correlation of forces and bodily injury.* PACE Recognized by The Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2017.

MRI, Bone Scan and X-Ray Protocols, Physiology and Indications for the Trauma Patient, *MRI interpretation, physiology, history and clinical indications, bone scan interpretation, physiology and clinical indications, x-ray clinical indications for the trauma patient.* PACE Recognized by The Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2017.

Neurodiagnostic Testing Protocols, Physiology and Indications for the Trauma Patient, *Electromyography (EMG), Nerve Conduction Velocity (NCV), Somatosensory Evoked Potential (SSEP), Visual Evoked Potential (VEP), Brain Stem Auditory Evoked Potential (BAER) and Visual-Electronystagmography (V-ENG) interpretation, protocols and clinical indications for the trauma patient.* PACE Recognized by The Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2017.

Documentation and Reporting for the Trauma Victim, *Understanding the necessity for accurate documentation and diagnosis utilizing the ICD-9 and the CPT to accurately describe the injury through diagnosis. Understanding and utilizing state regulations on reimbursement issues pertaining to healthcare.* PACE Recognized by The Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2017.

Documenting Clinically Correlated Bodily Injury to Causality, *Understanding the necessity for accurate documentation, diagnosis and clinical correlation to the injury when reporting injuries in the medical-legal community. Documenting the kinesiopathology, myopathology, neuropathology, and pathophysiology in both a functional and structural paradigm.* PACE Recognized by The Federation of Chiropractic Licensing Boards], Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2017.

MRI History and Physics, *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.* Certification in MRI Interpretation, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

MRI Spinal Anatomy and Protocols, *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.* Certification in MRI Interpretation, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

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.* Certification in MRI Interpretation, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

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.* Certification in MRI Interpretation, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

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.* Certification in MRI Interpretation, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

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.* Certification in MRI Interpretation, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

MRI Protocols Clinical Necessity, *MRI slices, views, T1, T2, STIR axial, stacking, FFE, FSE and sagittal images. Clinical indication for the utilization of MRI and pathologies of disc in both trauma and non-trauma sequelae, including bulge, herniation, protrusion, extrusion and sequestration.* Certification in MRI Interpretation, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

MRI Interpretation of Lumbar Degeneration/Bulges, *MRI slices, views, T1, T2, STIR axial, stacking, FFE, FSE and sagittal images in the interpretation of lumbar degeneration. With the co-morbidities and complications of stenosis, pseudo-protrusions, cantilevered vertebrate, Schmorl's nodes and herniations. Central canal and cauda equina compromise interpretation with management.* Certification in MRI Interpretation, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

MRI Interpretation of Lumbar Herniations, *MRI slices, views, T1, T2, STIR axial, stacking, FFE, FSE and sagittal images in the interpretation of lumbar herniations. With the co-morbidities and complications of stenosis, pseudo-protrusions, cantilevered vertebrate, Schmorl's nodes and herniations. Morphology of lumbar disc pathologies of central and lateral herniations, protrusions, extrusions, sequestration, focal and broad based herniations are defined and illustrated. Central canal and cauda equina compromise interpretation with management.* Certification in MRI Interpretation, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

MRI Interpretation of Cervical Degeneration/Bulges, *MRI slices, views, T1, T2, STIR axial, stacking, FFE, FSE and sagittal images in the interpretation of cervical degeneration. With the co-morbidities and complications of stenosis, pseudo-protrusions, cantilevered vertebrate, Schmorl's nodes and herniations. Spinal cord and canal compromise interpretation with management.* Certification in MRI Interpretation, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

MRI Interpretation of Cervical Herniations, *MRI slices, views, T1, T2, STIR Axial, FFE, FSE and sagittal images in the interpretation of lumbar herniations. With the co-morbidities and complications of stenosis, pseudo-protrusions, cantilevered vertebrate, Schmorl's nodes and herniations. morphology of lumbar disc pathologies of central and lateral herniations, protrusions, extrusions, sequestration, focal and broad based herniations are defined and illustrated. Spinal cord and canal compromise interpretation with management.* Certification in MRI Interpretation, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

MRI Interpretation of Degenerative Spine and Disc Disease with Overlapping Traumatic Insult to Both Spine and Disc, *MRI slices, views, T1, T2, STIR Axial, FFE, FSE and sagittal images in the interpretation of degenerative spondylolisthesis, spinal canal stenosis, Modic type 3 changes, central herniations, extrusions, compressions, nerve root compressions, advanced spurring and thecal sac involvement from an orthopedic, emergency room, chiropractic, neurological, neurosurgical, physical medicine perspective.* Certification in MRI Interpretation, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

Spinal Biomechanical Engineering: Cartesian System, *The Cartesian Coordinate System from the history to the application in the human body. Explanation of the x, y and z axes in both translation and rotations (thetas) and how they are applicable to human biomechanics.* Certification in Spinal Biomechanical Engineering, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Boards, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

Spinal Biomechanical Engineering: Cervical Pathobiomechanics, *Spinal biomechanical engineering of the cervical and upper thoracic spine. This includes the normal and pathobiomechanical movement of both the anterior and posterior motor units and normal function and relationship of the intrinsic musculature to those motor units. Nomenclature in reporting normal and pathobiomechanical findings of the spine.* Certification in Spinal Biomechanical Engineering, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Boards, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

Spinal Biomechanical Engineering: Lumbar Pathobiomechanics, *Spinal biomechanical engineering of the lumbar spine. This includes the normal and pathobiomechanical movement of both the anterior and posterior motor units and normal function and relationship of the intrinsic musculature to those motor units. Nomenclature in reporting normal and pathobiomechanical findings of the spine.* Certification in Spinal Biomechanical Engineering, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Boards, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

Spinal Biomechanics in Trauma, *To utilize whiplash associated disorders in various vectors of impact and whiplash mechanisms in determining pathobiomechanics. To clinically correlate annular tears, disc herniations, fractures, ligament pathology and spinal segmental instability as sequelae to pathobiomechanics from trauma. The utilization of digital motion x-ray in diagnosing normal versus abnormal facet motion along with case studies to understand the clinical application.* Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Boards, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

Spinal Biomechanical Engineering & Organizational Analysis, *Integrating spinal biomechanics and pathobiomechanics through digitized analysis. The comparison of organized versus disorganized compensation with regional and global compensation. Correlation of the vestibular, ocular and proprioceptive neurological integration in the righting reflex as evidenced in imaging. Digital and numerical algorithm in analyzing a spine.* Certification in Spinal Biomechanical Engineering, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Boards, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

Spinal Biomechanical Engineering: Cervical Digital Analysis, *Digitizing and analyzing the cervical spine in neutral, flexion and extension views to diagnose pathobiomechanics. This includes alteration of motion segment integrity (AMOSI) in both angular and translational movement. Ligament instability/failure/pathology are identified all using numerical values and models. Review of case studies to analyze pathobiomechanics using a computerized/numerical algorithm.* Certification in Spinal Biomechanical Engineering, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Boards, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

Spinal Biomechanical Engineering: Lumbar Digital Analysis, *Digitalizing and analyzing the lumbar spine images to diagnose pathobiomechanics. This includes anterior and posterior vertebral body elements in rotational analysis with neutral, left and right lateral bending in conjunction with gate analysis. Ligament instability/failure/pathology is identified all using numerical values and models. Review of case studies for analysis of pathobiomechanics using a computerized/numerical algorithm along with corrective guidelines.* Certification in Spinal Biomechanical Engineering, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Boards, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

Connective Tissue Spinal Disc Permanent Pathology, Primary Spine Care 4, *Herniated, bulged, protruded and extruded discs, etiology and morphology. Age-dating disc pathology inclusive of Modic changes, piezoelectric effect, Wolff's Law and radicular clinical presentation,* Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Boards, Long Island, NY, 2017.

Connective Tissue Pathology and Research, Primary Spine Care 4, *Utilization in spinal models considering the opioid abuse and various spinal models in contemporary health care. Care paths for mechanical spine pain and the evidence for conservative chiropractic care,* Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Boards, Long Island, NY, 2017.

Bio-Neuro-Mechanical Lesions and Spine Care, Primary Spine Care 4, *Mechanoreceptor, proprioceptor, nociceptor innervation and control of the spinal system with central nervous system action and interaction. The integration of the pain processing network and the HPA Axis (hypothalamus, adrenal and pituitary) with the chiropractic spinal adjustment,* Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Boards, Long Island, NY, 2017.

Ethics, Documentation and Research, Primary Spine Care 4, *Maintaining ethical Interprofessional relationships based upon an evidenced based practice inclusive of triage, diagnostics and reporting. Creating thorough documentation that reflects your complete findings encompassing descriptive ICD-10 codes and concludes the presence or absence of pathology,* Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Boards, Long Island, NY, 2017.

Head Trauma, Brain Injury and Concussion, *Brain and head physiology, brain mapping and pathology as a sequela to trauma. Traumatic brain injury, mild traumatic brain injury, axonal shearing, diffuse axonal injury and concussion are detailed in etiology and clinically. Clinical presentation, advanced diagnostic imaging and electrodiagnostics are detailed in analysis to create a differential diagnosis. Balance disorders that often occur as a result of trauma are also explored from clinical presentation to advanced imaging and differential diagnosis.* Certification in Head Trauma, Brain Injury and Concussion, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, Long Island, NY, 2017.

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.* Certification in Spinal Trauma Pathology, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Boards, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, PACE Recognized by The Federation of Chiropractic Licensing Boards] 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, 2017.

Spinal Trauma Pathology: Biomechanics of Traumatic Disc Bulge and Age Dating Herniated Disc Pathology, *The biomechanics of traumatic disc bulges as sequela from trauma and the comorbidity of ligamentous pathology. Age-dating spinal disc pathology in accordance with Wolff's Law.* Certification in Spinal Trauma Pathology, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

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.* Certification in Spinal Trauma Pathology, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

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 gray matter, thalamus and cortices involvement.* Certification in Spinal Trauma Pathology, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

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.* Certification in Spinal Trauma Pathology, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

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.* Certification in Spinal Trauma Pathology, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

Accident Reconstruction: Terms, Concepts and 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.* Certification in Accident Reconstruction, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, Long Island, NY, 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.* Certification in Accident Reconstruction, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, Long Island, NY, 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.* Certification in Accident Reconstruction, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, Long Island, NY, 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.* Certification in Accident Reconstruction, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, Long Island, NY, 2017.

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.* Certification in Impairment Rating Spine and Nervous System, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Boards, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

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.* Certification in Orthopedic Testing, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

Orthopedic Testing: Cervical Spine - Part 1, *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.* Certification in Orthopedic Testing, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

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.* Certification in Orthopedic Testing, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

Orthopedic Testing - Clinical Grand Rounds, *Integration of 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.* Certification in Orthopedic Testing, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

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.* Certification in Stroke Anatomy & Evaluation for Chiropractors and Manual Medicine Specialists, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Boards, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

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.* Certification in Stroke Anatomy & Evaluation for Chiropractors and Manual Medicine Specialists, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Boards, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

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.* Certification in Stroke Anatomy & Evaluation for Chiropractors and Manual Medicine Specialists, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Boards, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

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.* Certification in Stroke Anatomy & Evaluation for Chiropractors and Manual Medicine Specialists, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Boards, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2017.

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 reimbursor's requirements for complete documentation.* Certification in Medical-Legal-Insurance Documentation, Academy of Chiropractic Post-Doctoral Division, PACE Recognized by The Federation of Chiropractic Licensing Boards, Long Island, NY, 2017.

Impairment Rating for Disability Evaluation, *Impairment Rating of Spine, Pelvis, Upper Extremity, Lower Extremity, Amputation and Medical-Legal Reporting using AMA Guides to the Evaluation of Permanent Impairment, 6th Edition.* Kaplan Seminars, Orlando, FL, 2011.

Diagnosis and Clinical Management of Acceleration/Deceleration Trauma and Whiplash Related Temporomandibular Joint Disorders, *Study, diagnosis and clinical management of whiplash injuries more specifically called Cervical Acceleration/Deceleration Syndrome,* Certification in Diagnosis & Clinical Management of Acceleration/Deceleration Trauma & Whiplash Related Temporomandibular Joint Disorders, Spine Research Institute of San Diego, Spine Research Institute of San Diego, Atlanta, GA, 1997.

SELECTED MEMBERSHIPS

Academy of Chiropractic, Member, 2025 Present

National Spine Management Group, 2019 - 2024

Academy of Chiropractic, Active Trauma Team Member, 2017 - Present.

Academy of Chiropractic, Member, 2017 - 2019.

Florida Chiropractic Association, Member, 1995 - 2015.