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Occupational History

Clinic Director, Chiropractor, Texas Chiropractic and Rehab, PC DBA: Texas Spine and Injury Center, Cedar Park Texas, 2007 – Present

Family Hospital Systems – Family Emergency Room at Cedar Park, Staff and on call Chiropractor, Cedar Park, TX, 2019 – 2021

Designated Doctor, Texas Department of Insurance / Division of Workers' Compensation, State of Texas, 2012 - 2018

Co-Director, Chiropractor, Advanced Spine and Joint Associates, Austin, TX, 2008 - 2010

Chiropractor, Scott Chiropractic Center, Layton, UT, 2006 - 2007

Education and Licensure

Doctor of Chiropractic, Licensed in the State of Texas, License #10631, 2007 - present

Doctor of Chiropractic, Licensed in the State of Utah, License #6329800-1202, 2006 - 2008

Doctor of Chiropractic, Licensed in the State of Idaho, License #CHIA-1223, 2006 - 2008

Doctorate of Chiropractic, Texas Chiropractic College, Pasadena, TX, 2006

Externship, Advanced Spine and Rehabilitation. Las Vegas and Henderson, NV, 2006

Preceptorship, Texas Chiropractic College, Advanced Spine and Rehabilitation, Las Vegas and Henderson, NV, 2006

Neurosurgery Hospital Rotation Program, Texas Chiropractic College, St. Joseph Medical Center, Houston, TX, 2006

Chiropractic Internship, Texas Chiropractic College, Moody Health Center. Pasadena, TX 2005-2006

National Board of Chiropractic Examiners, Part I, 2004

National Board of Chiropractic Examiners, Part II, 2005

National Board of Chiropractic Examiners, Part III, 2006

National Board of Chiropractic Examiners, Physiotherapy 2006

National Board of Chiropractic Examiners, Part IV, 2006

Bachelor of Science in Human Biology, Texas Chiropractic College, Pasadena, TX, 2004

Associate of Science, Utah Valley University, Orem, UT, 2002

Fellowships, Mini Fellowships, Qualifications, Certifications, and Diplomates

Fellowship in Primary Spine Care, State University of New York at Buffalo, Jacobs

School of Medicine, Office of Continuing Education, and Cleveland University-Kansas City,

College of Chiropractic, 2024

Mini-Fellowship in Musculoskeletal Radiology – MRI, X-Ray, and CAT Scan Imaging of the Extremities – 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, 2024

Mini-Fellowship in Neuroradiology – MRI Spine – 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, 2024

MRI Interpretation Review Qualified, Recognized by Cleveland University-Kansas City, Chiropractic and Health Sciences with courses recognized by the ACCGME in conjunction with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences. Qualification language approved by the American Chiropractic College of Radiology (ACCR) and the American Chiropractic Board of Radiology (ACBR). Cleveland University, Kansas City, 2023

Hospital Based Spine Care Qualified, *Credentialed in hospital protocols, emergency room protocols, acute and chronic patient triage inclusive of MRI spine interpretation, spinal biomechanical engineering, head trauma, concussion, mild traumatic and traumatic brain injuries* co-credentialed through the ACCME (Accreditation Council for Continuing Medical Education) Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Texas Chiropractic College and PACE approved by the Federation of Chiropractic Licensure Boards and the Academy of Chiropractic, Long Island, NY, 2019

Primary Spine Care Qualified, *This qualification includes graduate chiropractic education in healthy and traumatically altered spinal morphology inclusive of osseous, connective tissue and neurological structure, function*

and pathology. This certifies you are qualified in assessing predictive models in spinal biomechanics and devising engineering paradigms for treatment plans to maximize spinal homeostasis in an evidenced based conclusion. In addition, this qualification acknowledges your expertise in triaging the injured and coordinating collaborative care from the trauma through conclusion of rehabilitation Academy of Chiropractic Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, New York, 2018

Certification as a Texas State Designated Workers' Compensation Doctor, Texas Department of Insurance Division of Workers' Compensation Designated Doctor Outreach and Oversight Section, Austin, TX, 2016

Certification in MRI Spine Interpretation, Texas Chiropractic College, Recognized by the PACE Program of 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, 2015

Diplomate, American Academy of Medical Legal Professionals, 2015

Advanced Certification of Competency, Whiplash and Brain Injury Traumatology, Successfully completed a comprehensive training program and qualifying examination in biomechanics, occupant kinematics, clinical diagnostics, and management of spinal trauma and mild traumatic brain injuries, and having satisfied all other prerequisite training requirement. Spine Research Institute of San Diego, 2014

Certification, Whiplash and Brain Injury Traumatology, Satisfactorily completed a comprehensive training program in whiplash and brain injury traumatology, emphasizing the biomechanics of injury mechanisms, occupant kinematics, automobile crash reconstruction methods, our most current knowledge of soft tissue, endocrinological, bony, and nervous system disorders, advanced imaging techniques, and comprehensive case management of whiplash and related disorders. Spine Research Institute of San Diego, Houston, TX, 2014

Certification as a Texas State Designated Workers' Compensation Doctor, Texas Department of Insurance Division of Workers' Compensation Designated Doctor Outreach and Oversight Section, Austin, TX, 2014

Certification as a Texas State Designated Workers Compensation Doctor, American Academy of Disability Evaluating Physicians, Austin, TX 2012

Post-Graduate Education,

Primary Spine Care 16, Trends in Triage and Diagnosing Spinal Pathology, *Diagnosing and demonstrative reporting of the spinal cord, nerve root, thecal sac, disc recurrent meningeal nerve, myelomalacia, myelopathy, fracture, chemical radiculitis, and connective tissue pathologies, and osseous compression of nociceptors. Collaborative care with medical specialists on spinal pathology and medical-legal reporting requirements.* Cleveland University Kansas City, Chiropractic and Health Sciences, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2024

Primary Spine Care 16, MRI Spine Interpretation, *Identifying and diagnosing spinal disc pathologies: bulged, herniated, protruded, extruded-communited, extruded-sequestered. MRI sequence protocols: T1, T1 fat saturation, T2, T2 fat saturation, STIR, proton density, fast spin echo, echo gradient, coronal, sagittal and axial. Triage of disc pathologies and collaborative care.* Cleveland University Kansas City, Chiropractic and Health Sciences, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2024

Primary Spine Care 16, Spinal Biomechanical Pathology, *Identifying and diagnosing spinal segmental lesions in the facet, joint capsule involving ligamentous mechanoreceptors, and spinal proprioceptors. The central segmental motor control mechanism with upper motor neuron involvement with disparate efferent effects and demonstrative diagnostic tools to differentially diagnose the primary lesion. The statistical outcome of treating biomechanical spinal lesions.* Cleveland University Kansas City, Chiropractic and Health Sciences, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2024

Primary Spine Care 16, Differentially Diagnosing Arthritides on X-ray and MRI, *Identifying and diagnosing Osteoarthritis in hand, wrist, elbow, shoulder, foot, ankle, knees, hips on X-ray. Identifying and diagnosis erosive arthritis and Rheumatoid Arthritis on X-ray, MRI imaging, and ultrasound MRI in the hand, elbow, knee, and spine, Psoriatic and Lupus/Jaccoud Arthritis in the hand. Crystallin Arthropathy of the hand, Gout in the feet and spine, and Calcium Pyrophosphate Dihydrate Deposition Disease (CPPD) of the hand. Diagnosing of ankylosing spondylitis of the spine was also identified.* Cleveland University Kansas City, Chiropractic and Health Sciences, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2024

Primary Spine Care 16, Incidental Tumors and Pathology Visualized on MRI Spine Images, *Identifying and diagnosing Schwannoma's, Adenoma's, Fibroid Leiomyomas and Uterine Sarcoma's, Renal Cell Tumors, Renal Cysts, and Aortic Aneurysms. The physics of T1, T1 fat saturation, T2, T2 fat saturation, STIR, proton density, fast spin echo, echo gradient, coronal, sagittal, and axial. CT Hounsfield units and diagnosing tumors.* Cleveland University Kansas City, Chiropractic and Health Sciences, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2024

Primary Spine Care 16, Documentation, Diagnosis and Reporting on Medical-Legal Trauma Cases, *Determining and documenting the history of proximate cause, how to demonstratively document pain, weakness, and numbness using evidence-based protocols. The demonstrative documentation of MRI spine pathology and being able to differentially diagnose previous vs current pathology in prognosing permanencies. The clinical correlation of causality, demonstrative bodily injury, and persistent functional losses using emotional intelligence.* Cleveland University Kansas City, Chiropractic and Health Sciences, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2024

Primary Spine Care 16, Spinal Disc Morphology, and Chronicity of Disc Pathology, *Spinal disc morphology of*

lamellar tracts and fiber orientation, the non-uniformity of discal zones with the chemical content of each. How Proteoglycans and Aggrecans are integral in disc hydration and age-dating pathology. Understanding the vascularization of the osseous end-plate, cartilaginous end-plate, and disc from birth through puberty is essential to accurately diagnosing disc pathology. Being able to relate disc herniations to end-plate fractures with central herniation and clinically correlating it to chronic back pain. Cleveland University Kansas City, Chiropractic and Health Sciences, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2024

Fellow, Primary Spine Care, 2-year program on spinal trauma, spinal management, advanced imaging, electrodiagnostics, accident engineering, spinal biomechanical engineering, triaging the injured, stroke diagnosis, demonstrative documentation, connective tissue pathology, ligament pathology diagnosis and management, and spinal treatment evidence-based outcome studies. The program requires collaboration in advanced imaging for spinal and MSK radiology and being published in case studies. Certified in Joint Providership from the State University of New York at Buffalo, Jacobs School of Medicine, Office of Continuing Medical Education, Cleveland University Kansas City, College of Chiropractic, and the Academy of Chiropractic, Long Island, New York 2024

Mini-Fellowship in Musculoskeletal (MSK) Arthritides Imaging in Upper Extremities, *MRI, CAT Scan, and X-ray interpretation of shoulder, elbow, wrist, hand, and fingers. Identifying arthritides in upper extremities.* Academy of Chiropractic Post-Doctoral Division, Cleveland University, Kansas City, College of Chiropractic, ACCME in Joint Providership with the State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Office of Continuing Medical Education, Long Island, NY, 2024

Mini-Fellowship in Musculoskeletal (MSK) Tumor, Fracture, dislocation, and Infection Imaging in Upper Extremities, *MRI, CAT Scan, and X-ray interpretation of shoulder, elbow, wrist, hand, fingers. Identifying tumors, fractures, dislocations, and infections in joints, including the long bones attached to the joints.* Academy of Chiropractic Post-Doctoral Division, Cleveland University, Kansas City, College of Chiropractic, ACCME in Joint Providership with the State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Office of Continuing Medical Education, Long Island, NY, 2024

Mini-Fellowship in Musculoskeletal (MSK) Soft Tissue Imaging in Upper Extremities, *MRI, CAT Scan, and X-ray interpretation of shoulder, elbow, wrist, hand, fingers. Identifying soft tissue injuries in joints; labrum, meniscus, and ligament and tendon injuries.* Academy of Chiropractic Post-Doctoral Division, Cleveland University, Kansas City, College of Chiropractic, ACCME in Joint Providership with the State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Office of Continuing Medical Education, Long Island, NY, 2024

Mini-Fellowship in Musculoskeletal (MSK) Arthritides Imaging in Lower Extremities, *MRI, CAT Scan, and X-ray interpretation of pelvis, hips, knee, ankle, foot, and toes. Identifying arthritides in upper extremities.* Academy of Chiropractic Post-Doctoral Division, Cleveland University, Kansas City, College of Chiropractic, ACCME in Joint Providership with the State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Office of Continuing Medical Education, Long Island, NY, 2024

Mini-Fellowship in Musculoskeletal (MSK) Tumor, Fracture, dislocation, and Infection Imaging in Lower

Extremities, *MRI, CAT Scan, and X-ray interpretation of pelvis, hips, knee, ankle, foot, and toes. Identifying tumors, fractures, dislocations, and infections in joints, including the long bones attached to the joints.* Academy of Chiropractic Post-Doctoral Division, Cleveland University, Kansas City, College of Chiropractic, ACCME in Joint Providership with the State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Office of Continuing Medical Education, Long Island, NY, 2024

Mini-Fellowship in Musculoskeletal (MSK) Soft Tissue Imaging in Lower Extremities, *MRI, CAT Scan, and X-ray interpretation of pelvis, hips, knee, ankle, foot, and toes. Identifying soft tissue injuries in joints; labrum, meniscus, and ligament and tendon injuries.* Academy of Chiropractic Post-Doctoral Division, Cleveland University, Kansas City, College of Chiropractic, ACCME in Joint Providership with the State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Office of Continuing Medical Education, Long Island, NY, 2024

Mini-Fellowship in Neuroradiology – MRI Spine – Part 1, *Evidence-based studies in Modic Changes, Disc and Referred Pain, MRI and Cervical Musculature, Kinetic MRI Images, Neurological Innervation, MRI and Injury Mechanisms, Discogenic Pain, Annular Tears and Fissures, Asymptomatic Herniations.* ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2024

Mini-Fellowship in Neuroradiology – MRI Spine – Part 2, *Identify and oral examination of 60 MRI sequences (over 2500 images) of disc bulges, circumferential, radial, and transverse fissures, varices, and herniations inclusive of the following types: protrusion, extrusions (sequestered and migrated/comminuted extrusions). MRI sequencing for accurate interpretation with contemporary nomenclature and reporting.* ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2024

Primary Spine Care 15: Advanced MRI and X-Ray Documentation in Clinical Practice, *Interpreting and utilizing X-ray and MRI findings in creating demonstrative documentation. Advanced identification of spinal disc lesions, herniations, bulges, protrusion, extrusion, and fragmentations through computer graphics. Identification and demonstrative documentation of vertebral motor unit pathology and reporting demonstratively using computer graphics.* Cleveland University Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2023

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

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

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

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

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

Primary Spine Care 15; Trends in Spinal Care, *An evidence-based approach to concluding accurate diagnosis, prognosis, and treatment plan, Eradicating the non-specific back pain dogma utilizing X-ray digitizing based on literature standards, Creating treatment plans with identifying the primary spinal lesions using evidence-based tools.* Cleveland University Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2023

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

Extremity MRI & Xray Interpretation of the Shoulder, *Identifying normal anatomy on both MRI and x-ray, inclusive of osseous, connective tissue, and neurological structures. Identifying fractures in the adult and pediatric cases. Differentially diagnosing various arthritic etiologies of osseous derangement.* Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2023

Extremity MRI & Xray Interpretation of the Shoulder, *Identifying fractures in the adult and pediatric cases. Differentially diagnosing various arthritic changes vs. benign and metastatic Tumors.* Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2023

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

Post-Doctoral Division, Long Island, NY, 2023

Extremity MRI & Xray Interpretation of the Wrist, *Identifying normal anatomy on both MRI and x-ray, inclusive of osseous, connective tissue, and neurological structures, identifying fractures in the adult and pediatric cases. Differentially diagnosing various arthritic etiologies of osseous derangement. Differentially diagnosing various arthritic changes vs. benign and metastatic Tumors.* Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2023

Extremity MRI & Xray Interpretation of the Hand, *Identifying normal anatomy on both MRI and x-ray, inclusive of osseous, connective tissue, and neurological structures, identifying fractures in the adult and pediatric cases. Differentially diagnosing various arthritic etiologies of osseous derangement. Differentially diagnosing various arthritic changes vs. benign and metastatic Tumors.* Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2023

Extremity MRI & Xray Interpretation of the Hip, *Identifying normal anatomy on both MRI and x-ray, inclusive of osseous, connective tissue, and neurological structures. Identifying fractures in the adult and pediatric cases. Differentially diagnosing various arthritic etiologies of osseous derangement.* Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2023

Extremity MRI & Xray Interpretation of the Hip, *Identifying fractures in the adult and pediatric cases. Differentially diagnosing various arthritic changes vs. benign and metastatic Tumors.* Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2023

Extremity MRI & Xray Interpretation of the Knee, *Identifying normal anatomy on both MRI and x-ray, inclusive of osseous, connective tissue, and neurological structures. Identifying fractures in the adult and pediatric cases. Differentially diagnosing various arthritic etiologies of osseous derangement.* Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2023

Extremity MRI & Xray Interpretation of the Knee, *Identifying fractures in the adult and pediatric cases. Differentially diagnosing various arthritic changes vs. benign and metastatic Tumors.* Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2023

Extremity MRI & Xray Interpretation of the Hand, *Identifying normal anatomy on both MRI and x-ray, inclusive of osseous, connective tissue, and neurological structures, identifying fractures in the adult and pediatric cases. Differentially diagnosing various arthritic etiologies of osseous derangement. Differentially diagnosing various arthritic changes vs. benign and metastatic Tumors.* Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2023

Extremity MRI & Xray Interpretation of the Foot, *Identifying normal anatomy on both MRI and x-ray, inclusive of osseous, connective tissue, and neurological structures, identifying fractures in the adult and pediatric cases. Differentially diagnosing various arthritic etiologies of osseous derangement. Differentially diagnosing various arthritic changes vs. benign and metastatic Tumors.* Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2023

Trends in Spinal Healthcare, *Analyzing spinal healthcare trends in both utilization and necessity and understanding the marketplace and how a clinical excellence level is reflected in a doctors' documentation and credentials.*

Treatment pathways in triaging spinal pathobiomechanics. 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, 2023

MRI Spine Interpretation Advanced Diagnosis, *An evidence-based understanding of time-related etiology of disc pathology considering the American Society of Neuroradiology's designation of protrusion, extrusion, and sequestration of spinal discs, T1, T2, STIR and Proton-Density weighted evaluation to diagnose spine form MRI accurately.* 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, 2023

Spinal Biomechanical Engineering Analytics and Case Management, *Utilizing spinal mensurating algorithms to conclude a pathobiomechanical vs. normal spine in the absence of anatomical pathology. Clinically correlating a history and physical examination findings to x-ray biomechanical results in creating an accurate diagnosis, prognosis, and treatment plan.* 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, 2023

MSK Extremity Radiological Interpretation, *Utilizing both MRI and x-ray to diagnose 1) Arthritis - Inflammatory and Degenerative, 2) Advanced cartilage assessment, 3) Rotator Cuff Tears, 4) Labral tears (shoulder and hip), 5) Tendon injuries and degeneration, 6) Meniscal tears, 7) Ligamentous injuries, 8) Common fractures, 9) Sports-related injury patterns, 10) Plantar fasciitis.* 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, 2023

Demonstrative Medical-Legal Documentation, *The narrative report. How to effectively create medical-legal documentation and what the courts look for. Making your "4-Corner" (narrative) report demonstrable and build a reputation as an evidence-based provider. The step-by-step minutiae of building a report.* 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, 2023

Managing Non-Anatomical Spine Pain, *Treatment modalities centered upon "best-outcomes" in an evidence-based model considering chiropractic vs. physical therapy and chiropractic vs. medicine. Considerations of disability, pain reduction, functional improvement, drugs utilized, and side-effects are all considered.* 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, 2023

Chiropractic as the First Option for Spine, A Literature-Based Standard, *Utilizing clinical findings in conjunction with advanced imaging and electrodiagnostic findings in managing collaborative relationships with medical specialists. Applying a literature standard to care to ensure conservative care as the first option.* 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, 2023

Chiropractic as the First Option for Spine, A Literature-Based Standard, *Managing spinal related cases based upon MRI findings of herniations, bulges, protrusion, extrusions (comminuted and fragmented) utilizing thin-sliced acquisition protocols. When to consider ordering T1, T2, Short Tau Inversion Radiant, proton density and Dixon sequencing for spinal related pathology.* 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, 2023

Chiropractic as the First Option for Spine, A Literature-Based Standard, *Creating literature-based documentation inclusive of history and a clinical examination that encompasses causality, diagnosis, prognosis and treatment plans. Ensuring the whole person impairment ratings are consistent with contemporary literature.* 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, 2023

Chiropractic as the First Option for Spine, A Literature-Based Standard, *Spinal biomechanical engineering models related to pathobiomechanics and literature-based standards in creating an accurate diagnosis, prognosis, and treatment plan. Determining impairment ratings based upon alteration of motion segment integrity utilizing motion-imaging, and creating demonstrable evidence for continued treatment plans.* 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, 2023

Documentation in Medical Collaborative Cases, *Concluding an E&M report in cases involving medical primary care providers of medical specialists that have complicated case histories, significant risk factors, and inconclusive findings. Triage and management of complicated cases requiring the clinical evaluation, advanced imaging and electrodiagnostics.* 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, 2023

MRI Spine Interpretation and Protocols, *Contemporary acquisition protocols including slice thicknesses and sequences inclusive of the ordering process. Interpretation of axial, sagittal and coronal views in T1, T2 and stir views inclusive of the disc, spinal cord, extra-dural and intra-dural pathology.* 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, 2023

Ethics and Medical Collaboration, *Having referral relationships with emergency rooms, neurosurgeons, orthopedic surgeons, pain management specialists, neurologists, neuroradiologist and medical primary care providers based upon clinical dilemmas that processed after a thorough history, examination and imaging if clinically indicated to conclude diagnostic dilemmas. Utilizing evidence-based protocols and acquisition of images and treatment pathways, collaborating with medical specialists and primaries to conclude and accurate treatment plan.* 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, 2023

Documentation in a Medical – Legal and Insurances, *Constructing and concluding an E&M (99202-99205) report that accurately reflects the history, clinical findings and management of trauma cases that concurrently meets the needs of both the carriers in the courts and ethical relationship that concurrently matches the standards of both contemporary academia requirements and a contemporary literature-based standard.* 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, 2023

Case Management, Spinal MRI and Documentation Documenting Herniated Discs, Age-Dating Disc Pathology, and Connective Tissue Pathology as Sequella to Trauma , *Herniated Discs and Connective Tissue Pathology, differentially diagnosing herniated discs vs. normal and bulging discs and protruded, extruded and fragmented discs. Normal vs. Pathological connective tissues and age-dating herniated discs.* Cleveland University Kansas City, 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, 2023

Case Management, Spinal MRI and Documentation, Case Management of Traumatic Spinal Injuries, *Understanding flexion-extension cervical injures and diagnosing connective tissue pathology. Determining impairments and the literature-based standard for permanent injuries.* Cleveland University Kansas City, 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, 2023

Case Management, Spinal MRI and Documentation, Managing Herniated and Bulging Discs, Serious Injury in Non-Herniated Cases from Trauma, *Spinal disc morphology, and innervation. Herniated, bulged, protruded, and sequestered disc characteristics and management. Literature-based documentation requirements for no-dis spinal injuries.* Cleveland University Kansas City, 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, 2023

Case Management, Spinal MRI and Documentation, Herniated Discs and Permanent Brain Malfunction & Biomechanical Failure, *A case-study of a post-traumatic herniated disc and related brain malfunction supported by contemporary literature, MRI acquisition, and necessity protocols.* Cleveland University Kansas City, 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, 2023

Case Management, Spinal MRI and Documentation, Demonstrative Documentation of Disc Herniation and MRI Physics, *Understanding the documentation requirements to demonstratively show spinal disc lesions in reporting pathology. Understanding the physics of a nucleus resonating in T1 and T2 weighted imagery.* Cleveland University Kansas City, 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, 2023

Case Management, Spinal MRI and Documentation, Post-Traumatic Herniated Discs, Related Migraines-

Headaches & Strain/Sprain Permanences, *Relationship of headaches, and migraines to cervical spine disc herniation, clinical rationale for ordering MRI's and the relationship of ligamentous pathology to spinal trauma*. Cleveland University Kansas City, 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, 2023

Case Management, Spinal MRI and Documentation, Documentation of Low-Speed Crashes in Determining Etiology of Serious Bodily Injuries, *Documentation requirements during the evaluation, and management encounter to understand the etiology of spinal injuries. Having a complete understanding the forces involved to conclude a differential diagnosis, while concurrent ruling malingers, if applicable*. Cleveland University Kansas City, 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, 2023

2023 Demonstrative Documentation Requirements, *Analyzing the requirements in anatomical diagnostic imagery to communicate spinal pathology. Integrating technology, clinical findings, and advanced graphic tools to communicate a diagnostic conclusion*. Cleveland University Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2023

MRI Spine Advanced Clinical Case Grand Rounds, *Clinical case review of MRI including intra and extra-dural findings inclusive of the disc and vascular anatomical lesions. Differentially diagnosing central cord lesions, and spinal cord vascular lesions in both acute trauma and degenerative presentations*. Cleveland University Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2023

Non-Specific Spine Pain, Chiropractic and Outcomes, *Analyzing neuro-biomechanical pathological lesions defines primary spinal lesions and removes the dogma of non-specific back pain. Creating evidence-based demonstrative documentation in the creation of treatment plans*. Cleveland University Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2023

Spinal Tumor MRI Interpretation, *Diagnosing and documenting: Ependymoma, Astrocytoma, Hemangioblastoma, Lipoma, Meningioma, Neurofibroma, Schwannoma, Myxopapillary Ependymoma*. Cleveland University Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2023

Demonstrative Narrative and Evaluation and Management Report Writing, Clinical record-keeping, why write clinical notes, the importance of context, what to include in a clinical note, tips for better clinical documentation, basic legal considerations, open clinical notes, how to keep documentation efficient. Cleveland University Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2023

Age-Dating Ligament/Connective Tissue Physiology and Pathology, Utilizing pain patterns, the high signal in the annulus, high signal outside the annulus, Modic changes, disc height, vacuum disc, sclerosis, Phirman rating, facet edema, and previous MRIs to determine the chronicity of pathology., *Master-Class in ligaments; anatomy, physiology, vascularization, neurological innervation, tissue repair, and how they all relate to clinical practice. Ligament pathology correlating to the mechanisms of patho-neuro-biomechanical lesions (vertebral subluxation complex). Also, how ligaments play a critical role in the chiropractic spinal adjustment and in defining the chiropractic spinal adjustment mechanisms.* Cleveland University Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2023

Clinical Grand Rounds in Biomechanics, Digitizing, and Advanced Imaging: *Case reviews concluding and accurate diagnosis, prognosis, and treatment plan utilizing evidence-based instrumentation and algorithms. Using demonstrative reporting of case findings to collaborate with co-treating physicians.* Cleveland University Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2023

Medical-Legal Documentation: *A documentation discussion on meeting the requirements of the courts, carriers, and licensure boards in complete and accurate reporting. Ensuring the diagnosis, prognosis, and treatment plan are demonstratively documented.* Cleveland University Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2023

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

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

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

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

MRI Spine Clinical Grand Rounds, *Visualizing, diagnosing, and documenting cervical spine sequencing, disc extrusion type herniations, neural canals, disc degeneration, thecal sac compression, central canal stenosis, cord displacement, reversal of cervical curve, Chiari 1 malformation. Identifying spinal biomechanical failure in MRI sequencing, with visualizing ligamentous pathology as cause for failure. Differentially diagnosing recent vs. older trauma based upon edematous signal in T1, T2, and STIR images.* Academy of Chiropractic Post-Doctoral Division, Accreditation Council for Continued Medical Education in conjunction with The State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Cleveland University - Kansas City, Long Island, NY, 2022

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

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

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

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

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

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

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

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 homeostatis until tetanus ensues creating osseous changes under the effect of Wolff's Law.* Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2022

Impairment Rating, *The understanding and utilization of the protocols and parameters of the AMA Guide to Evaluation of Permanent Impairment 6th Edition. Spine, neurological sequelae, migraine, sexual dysfunction, sleep and arousal disorders, station and gait disorders and consciousness are detailed for impairment rating. Herniated discs, radiculopathy, fracture, dislocation and functional loss are also detailed in relation to impairment ratings.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2022.

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

Diagnosing and Case Management. *The requirements of diagnosing based upon an initial evaluation and management encounter ranging from a 99202 – 99205 that includes comorbidities, non-musculoskeletal and sequellae to injury diagnosis.* Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island NY, 2022

Diagnosing and Case Management. *The requirement for diagnosing imaging inclusive of static x-rays, biomechanical x-rays, and MRI. Documenting the clinical findings of disc bulge, herniation, protrusion, extrusion, and fragmentation. Coding, diagnosing, and documenting individual treatment encounters in the clinical setting.* Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island NY, 2022

National Spine Management West Conference 2022 – *Communicating with the Spine*

Surgeon - Detailed review of the scientific literature supporting interprofessional collaboration

between the spine surgeon and the Doctor of Chiropractic was presented. Emphasis on

updated needs of the spine surgeon with focus on the understanding of pre and post-surgical

chiropractic care. Literature updates and documentation requirements were discussed.

Specific talking points are provided for telecommunication with the spine surgeon. National

Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland

University Kansas City College of Chiropractic, 2022.

National Spine Management West Conference 2022 – *Communicating with the Pain*

Management Physician - Review of the scientific literature supporting interprofessional

collaboration with the interventional pain management physician was outlined. Updates and

review of the chiropractic scientific literature in relation to pain management mechanisms of the

chiropractic adjustment were presented. Documentation and interprofessional referral,

communication and telecommunication talking points for daily practice was outlined. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, 2022.

National Spine Management West Conference 2022 – Communicating with the Primary Care Physician - Review of literature supporting interprofessional communication at the primary care level was presented. Literature outlining interprofessional communication and the needs of the primary care physician was discussed. Efficient reporting and communication points were reviewed. Chiropractic interaction with primary care physicians from a clinical perspective were outlined with an emphasis on supportive relationships. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, 2022.

National Spine Management West Conference 2022 – Communication with Physical Therapy – the untapped potential - Discussion on developing a collaborative relationship with physical therapy and its effect on outcomes and community-based care was outlined. Supportive scientific literature presenting the interaction between spinal biomechanics and supervised rehabilitative techniques was reviewed. Outcomes and interprofessional communication techniques were discussed with an emphasis on interprofessional referral and support of both professions. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, 2022.

National Spine Management West Conference 2022 – Interprofessional referral and pathways - Review and outline of complete workflows for patient evaluation, documentation and triage when clinically indicated were detailed. Efficiency and accuracy of interprofessional communication was presented in terms of the needs of the patient, pain management physician, spine surgeon, physical therapist, and primary care physician. Evidence based triage workflows were discussed and detailed with emphasis on preventing unnecessary escalation of care in

spine pain patients was presented. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, 2022.

National Spine Management West Conference 2022 – Communicating with the Lawyer – Disc Injuries - Discussion of the medical-legal implications of injuries to the intervertebral disc was presented. Clinical correlation to mechanism of injury, objective physical examination findings, results of advanced imaging and persistent functional loss were reviewed. Medical legal discussion of anatomy of intervertebral disc herniation, degenerative bulge, annular tear, and their relationship to nerve supply in terms the legal community can understand was detailed. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, 2022.

National Spine Management West Conference 2022 – Communicating with the Lawyer – AOMSI - Discussion of the medical-legal implications of injuries to the ligaments of the human spine was presented. Clinical correlation to mechanism of injury, objective physical examination findings, results of advanced imaging and persistent functional loss were reviewed. Medical legal discussion of the anatomy of spinal ligaments in the normal, degenerative, and traumatically injured spine was presented. Details of nerve supply to ligaments and the mechanism of scar tissue formation through the wound repair process was provided. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, 2022.

National Spine Management West Conference 2022 – Communicating with the Lawyer – Low Speed Collisions - Discussion of the medical-legal implications of injuries sustained as a result of a low speed/impact collision resulting in minimal property damage was outlined. Clinical correlation to the low-speed mechanism of injury, objective physical examination findings, results of advanced imaging and persistent functional loss was reviewed. Medical legal discussion related to the correlation between impact forces and human spinal tolerance

with particular attention being given to pre-existing degenerative spinal conditions was presented. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, 2022.

National Spine Management West Conference 2022 – *Anatomy of a Narrative Report – departing from gimmicks - Presentation on the flow of clinical information into the medical-*

legal format used by adjusters, attorneys, judges, jurors, and law clerks was provided. Key indicators of persistent functional loss such as physical examination findings, global and

segmental range of motion, advanced imaging findings and results of electrodiagnostic testing

were outlined. Direct discussion on where in a narrative report these findings are to be written

with an emphasis on patient assessment and expert opinion. National Spine Management

Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City

College of Chiropractic, 2022.

National Spine Management West Conference 2022 – *Advanced Imaging Protocols –*

update of the science of MRI - Detailed review of common MRI sequences for spine imaging

will be presented including T1, T2 and STIR in the sagittal and axial planes was presented.

Additional sequences such as Proton Density, Diffusion Weighted and Dixon was detailed and

reviewed. Particular attention were given to ordering contrast medium in a spine care practice.

National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, 2022.

National Spine Management West Conference 2022 – *Spine Care Leadership – educating*

the medical community - Overview of spine care leadership and the processes of creating an

Evidence-Based, Patient Centered reputation in your community was discussed. Focus on

structuring a medical community outreach program, what topics to include and the process of

building support was detailed. This section outlined the differences between the various

stakeholders in the medical community including nurses, physician assistants, physicians, and

administrative support staff was discussed. National Spine Management Group, LLC, Federation

of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, 2022.

National Spine Management West Conference 2022 – *Spine Care Leadership - educating the legal community - Overview of spine leadership and the process of creating a positive medical-legal provider reputation in your community was presented. Focus on structuring a legal community outreach program, what topics to include and the process of building support was detailed. This section outlined the differences between the various stakeholders in the legal community including adjusters, paralegals, lawyers, law clerks and judges was detailed.*

National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, 2022.

National Spine Management West Conference 2022 – *Compliance and Documentation – practice pitfalls 101 - Detailed review of compliance parameters within clinical documentation with emphasis on detailed efficient processes was presented. Pitfalls common to clinical practice was demonstrated with practical, office ready solutions to ensure proper workflows, compliance, and efficiency were outlined. Whole practice documentation modeling was discussed including the use of a scribe.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, 2022.

National Spine Management West Conference 2022 – *Updated Chiropractic Science Research - Review and discussion of 2021/2022 research supporting the chiropractic profession and the doctor of chiropractor as a spine care manager was outlined. Specific papers were presented related to the pain management, corrective, and health maintenance phases of chiropractic care. Overview of current and future research trends were demonstrated in relation to the pain management phase, corrective care phase and health maintenance phase of chiropractic management.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, 2022.

National Spine Management West Conference 2022 - *Preparing for Litigation – it starts*

with your documentation – outline of updated compliant reporting of the patient encounter within E/M evaluations, daily progress notes, goal setting and interprofessional management/referral was presented. Medical legal hurdles were explained and the impact of documentation on court room presentations was demonstrated. Overview of objective evidence in the diagnosis and management of traumatically injured patients was presented. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, 2022.

National Spine Management West Conference 2022 - How Jurors Determine Damage Awards- the importance of Anchors - discussion and review of litigation award Anchors and their influence on the chiropractic practice and documentation of functional losses due to spinal injury was outlined. Courtroom processes and review of testimony was presented. Consensus driven diagnosis and case management was emphasized. Objectification of bodily injury and its relation to short and long-term functional losses was presented. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, 2022.

National Spine Management West Conference 2022 - The Future of Spinal Biomechanics - Review of essential biomechanical parameters in the human spine was presented. Emphasis was placed on their clinical application, patient outcomes and communication with the spine surgeon when applicable. Pre and post-surgical case management was reviewed in the context of peer-reviewed medically indexed literature. A look to the future of interprofessional spine care between the chiropractor and the surgeon was presented. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, 2022.

National Spine Management West Conference 2022 – Spine Management and the Future of Spine Care - Discussion of the role of a spine manager in the daily treatment of spine

patients was presented. Emphasis was placed on the understanding of the roles of other providers in the care paradigm including interventional pain management, spine surgery and rehabilitation professionals. Interprofessional communication techniques were presented with a focus on diagnosis and management in a patient centered environment. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, 2022.

National Spine Management West Conference 2022 – Fellowship Training and the Chiropractic Literature - Overview of current literature-based examples of the evolution of chiropractic graduate education was presented. The need for clinical rotations, interprofessional communication and patient advocacy was detailed. Future training modules including learner outcome assessments and educational pathways were also outlined. Detailed review of the medical model of graduate education was detailed and explained with a pathway for chiropractic academic growth outlined. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, 2022.

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

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

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

MSK Extremity Radiological Interpretation, *Utilizing both MRI and x-ray in identifying via x-ray and advanced imaging extremity instabilities from ligamentous, osseous or neoplastic derangement.* Academy of Chiropractic Post-Doctoral Division, Cleveland University - Kansas City, Long Island NY, 2022

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

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

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

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

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

Neurosurgical Grand Rounds, *A clinical discussion of collaborating with neurosurgeons on spinal cord and spinal nerve root co-morbidities. Triaging cases with herniated, protruded, extruded, fragments discs and differentially diagnosing tethered cord, syringomyelia, traumatic Schmorl's Nodes, Myelomalacia, spinal cord edema, vacuum disc*

and other intra, and extra-dual lesions. Academy of Chiropractic Post-Doctoral Division, Cleveland University - Kansas City, Long Island NY, 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.

2021 Spine Management Conference – West – The Spine Management Physician – discussion of the Spine Management Physician concept utilizing supportive evidence was presented. Outline of trends in spinal pain management versus a curative model was discussed. Credentials, training, and triage methods were demonstrated for the Doctor of Chiropractic to increase proficiency in spine management. Scientific evidence supporting the need for a portal of entry physician dedicated to spine management oversight was outlined. Key differences between Spine Management Physician and Primary Spine Care were discussed. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University of Health Sciences, College of Chiropractic, Kansas City 2021

2021 Spine Management Conference – West – Chiropractic Evidence – Pain Management Care

– outline of neurological mechanisms of central nervous system modulation of pain in the human body was demonstrated. Specific peer-reviewed, medically indexed evidence was presented starting with 2012 Systematic Review outlining spinal manipulation's effectiveness in pain management. Current evidence as well as future trends were discussed and presented.

Neurological downregulation was discussed including afferent and efferent neurological pathways regulated by the dorsal horn of the spinal cord. Interprofessional communication and compliant documentation of the pain management phase of care was emphasized. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University of Health Sciences, College of Chiropractic, Kansas City 2021

2021 Spine Management Conference – West – Chiropractic Evidence – Corrective Care –

specific trends in the biomechanical assessment of the human spine were provided and discussed. Emphasis was placed on the transfer of laboratory based biomechanical science and clinical utilization of biomechanical parameters in the diagnosis and correction of spinal

biomechanical pathology. Peer reviewed medically indexed publications defining symptomatic vs asymptomatic were presented and discussed. Sagittal alignment and its relation to pelvic incidence was reviewed in relation to asymptomatic parameters. Interprofessional

communication relating to biomechanical stabilization and spinal rehabilitation was outlined and reviewed. Review of a regional versus whole spine model of spine management was

presented emphasizing the needs of the patient, primary care physician, pain management

physician and spine surgeon. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University of Health Sciences, College of Chiropractic, Kansas City 2021

2021 Spine Management Conference – West – Physical Examination Workflows – Cervical Spine – *detailed review of cervical spinal physical examination with emphasis on clinical triage*

between anatomical and biomechanical sources of spine pain. Neurological evaluation of the

neck and surrounding structures was reviewed including pathological reflexes, assessment of vascular compromise and myelopathic findings. Detailed patient screening was stressed and its correlation to physical examination, red flags and relative vs absolute contraindications to chiropractic care was presented. Patient positioning and efficient processes were reviewed and demonstrated. Details relating to cervical spine and orthopedic testing was discussed. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University of Health Sciences, College of Chiropractic, Kansas City 2021

2021 Spine Management Conference – West – Physical Examination Workflows – Thoracic and Lumbar Spine and Pelvis – *outlines of thoracic, lumbar and pelvis physical examination were presented. Neurological evaluation of the lumbar spine and surrounding structures was reviewed including pathological reflexes, assessment of cauda equina syndrome and triage processes for neurologically compromised patients. Detailed screening was stressed and its correlation to physical examination, red flags and relative vs absolute contraindications to chiropractic care was reviewed. Patient positioning and efficient processes was reviewed and demonstrated. Details relating to lumbar spine and pelvic orthopedic testing was discussed.*

National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University of Health Sciences, College of Chiropractic, Kansas City 2021

2021 Spine Management Conference – West – Interprofessional Communication and Reporting – *review of electronic health record workflows were presented and discussed with emphasis on CPT compliant and efficient reporting. The importance of communication with the patient's other healthcare providers was outlined and discussed. Specific needs of the primary care physician, pain management physician and spine surgeon were outlined and reviewed. Details of simplified vocabulary and necessity of thoroughness were emphasized. Administrative workflows ensuring regular and continued communication of clinical documentation was provided.* National Spine Management Group, LLC, Federation of Chiropractic Licensing

Boards, Cleveland University of Health Sciences, College of Chiropractic, Kansas City 2021

2021 Spine Management Conference – West – Patient Communication – communication

techniques were discussed with emphasis on patient comprehension to increase compliance and

reduce patient anxiety. Details were presented on simplification of complex medical

terminology to ensure understanding at the initial visitation as well as throughout the patient's

care plan. Conversational interaction and dissemination of health information at the

appropriate comprehension level was provided. Proper reporting and interprofessional

communication were emphasized in a wholistic approach to supporting the patient's needs.

National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University of Health Sciences, College of Chiropractic, Kansas City 2021

2021 Spine Management Conference – West – Intervertebral Disc Morphology – detailed

discussion of the morphological descriptions of intervertebral disc pathology in the cervical,

thoracic, and lumbar spine was presented. Differential diagnosis of disc bulge, herniation,

protrusion, extrusion, and sequestration were presented. Attention was given to the five grades

of annular fissure associating circumferential, radial, and transverse morphology. High intensity

zone (HIZ) was discussed in detail as well as its correlation to acute inflammatory fluid. Specific

MRI images were presented and correlated to consensus driven definitions of intervertebral disc

pathology. Pre-existing degenerative changes in the human spine such as disc osteophyte

complex, spondylosis, increased innervation of the intervertebral disc and endplate changes

were discussed and correlated to acute findings on MRI. In depth discussion of the difference

between morphology and etiology of intervertebral disc pathology was outlined. National Spine

Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University of

Health Sciences, College of Chiropractic, Kansas City 2021

2021 Spine Management Conference – West – Ligamentous Response to Traumatic Injury –

anatomical review of spinal ligaments including nerve supply and formation of scar tissue post

injury was presented. Function and histological composition were detailed and clinically correlated to physiological thresholds. Injury thresholds were also outlined and compared to the AMA Guides to the Evaluation of Permanent Impairment 5th and 6th edition. Detailed review of radiographic findings in the cervical and lumbar spine in the presence of ligamentous injury was reviewed and presented. Clinical criteria supporting the diagnosis of ligament injury and ligament laxity including patient history, physical examination, radiographic findings, and advanced imaging was presented. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University of Health Sciences, College of Chiropractic, Kansas City 2021

2021 Spine Management Conference – West – Causality and Spinal Ligamentous Injury - detailed outline of acute versus chronic spine injury findings were presented. Reliable grading systems for phases of spinal degeneration was reviewed and discussed. Scientifically validated measuring process for intervertebral disc height and the 5 Grades of spinal degeneration proposed by Kettler were outlined. Specific discussion was presented in the differential diagnosis of ligament laxity due to degenerative process and acute ligamentous injury in the functional spinal unit with specific examples of radiographic and advanced imaging findings. Clinical correlation with Modic I, Modic II and Modic III endplate changes including cadaver specimens was presented. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University of Health Sciences, College of Chiropractic, Kansas City 2021

2021 Spine Management Conference – West – Differential Spinal Tissue and Spinal Injury Triage – review of spinal tissue types and their response to physical stress and injury was presented. Prognostic factors in patient management were presented in relation to injury to spinal musculature, nerve tissue, ligamentous tissue, intervertebral disc, and bone. Tissue based triage, patient and interprofessional communication was emphasized and stressed. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University of Health Sciences, College of Chiropractic, Kansas City 2021

2021 Spine Management Conference – West – Innervation of Spinal Structures – specific

reviewed of the anatomical innervation of pain generating structures in the human spine was presented. Scientific chronology of nerve supply discovery was presented and discussed. Increased innervation of the degenerating intervertebral disc was presented and supported with contemporary scientific evidence. Spinal ligamentous structures as pain generating entities were also reviewed including anterior longitudinal ligament, posterior longitudinal ligament, supraspinous ligament, interspinous ligament and facet capsule. Clinical correlation to patient history, physical examination and imaging findings was emphasized with specific discussion on interprofessional triage and patient management. National Spine Management Group, LLC,

Federation of Chiropractic Licensing Boards, Cleveland University of Health Sciences, College of Chiropractic, Kansas City 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, Buffalo, NY, Lehi, UT 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 Boards, Buffalo, NY, Lehi, UT 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, Buffalo, NY, Lehi, UT 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, Buffalo, NY, Lehi, UT 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, Buffalo, NY, Lehi, UT 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, Buffalo, NY, Lehi, UT 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, Buffalo, NY, Lehi, UT 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, Buffalo, NY, Lehi, UT 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, Buffalo, NY, Lehi, UT 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, Buffalo, NY, Lehi, UT 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, Buffalo, NY, Lehi, UT 2021.

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

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

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

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

Trends in Spinal Healthcare, *Analyzing spinal healthcare trends in both utilization and necessity and understanding the marketplace and how a level of clinical excellence is reflected in a doctors' documentation and credentials. Treatment pathways in triaging spinal pathobiomechanics.* Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY, 2020

MRI Spine Interpretation, *An evidence-based understanding of time-related etiology of disc pathology considering the American Society of Neuroradiology's designation of protrusion, extrusion, and sequestration of spinal discs, Considering the signal intensity of discs in age-dating pathology and acquisition protocols for advanced spinal imaging.* Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY, 2020

Spinal Biomechanics; A Literature Perspective, *An evidenced-based model for spinal biomechanical engineering and pathobiomechanics considering the pathophysiological limits in translations, angular deviation, and rotational planes. Utilizing the Cartesian system in plotting vertebral points to demonstratively conclude an accurate diagnosis, prognosis and biomechanical treatment plan with the consideration of long-term care in the non-specific mechanical spine pain patient when necessary.* Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY, 2020

Case Management of Mechanical Spine Pathology, *Clinical Grand Rounds of herniated, protruded, extruded, sequestered, and bulging discs. Differentially diagnosing vascular vs. mechanical spinal lesions and the necessity for urgent vascular, neurological intervention, Collaborating in a team environment utilizing a neuroradiologist, electrophysiologist, and neurosurgeon with the chiropractor as the primary spine care provider.* Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY, 2020

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, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2020

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, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2020

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, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2020

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, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2020

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, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2020

Medical-Legal Ethical Relationships, Documentation and Legal Testimony, Report writing for legal cases, the 4 corners of a narrative and documenting damages with understanding defense medical documentation and consistent reporting of bodily injuries, Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2020

Medical-Legal Ethical Relationships, Documentation and Legal Testimony, Part 2, Understanding report writing and the types of medical reports required for court inclusive of diagnosis, prognosis and treatment plans with requirements of reporting causality and permanency, Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2020

Medical-Legal Ethical Relationships, Documentation and Direct Testimony, Organizing your documentation and understanding all collaborative documentation and how it fits into your diagnosis, prognosis and treatment plan, Understanding the nuances of the functional losses of your patients related to their bodily injuries, Academy of Chiropractic, Post-Doctoral Division. Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2020

Medical-Legal Ethical Relationships, Documentation and Direct Testimony Part 2, Utilizing demonstrative documentation in direct examination and communicating the results of your care concurrently with the written documentation and reporting an accurate diagnosis for all images, Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2020

Medical-Legal Ethical Relationships, Documentation and Direct Testimony Part 3, The evaluation, interpretation and reporting of collaborative medical specialists results and concluding an accurate diagnosis inclusive of all findings and reviewing all images to ensure an accurate diagnosis, Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2020

Medical-Legal Ethical Relationships, Documentation and Direct Testimony Part 4, Determining and documenting disabilities and impairments inclusive of loss of enjoyment of life and duties under duress and the evaluation and validation of pain and suffering, Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2020

Medical-Legal Ethical Relationships, Documentation and Cross Examination Testimony, Reporting your documentation factually and staying within the 4 corners of your medical report and scope of practice inclusive of understanding how your credentials allow you to report your documentation, Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2020

Medical-Legal Ethical Relationships, A Documentation Relationship Between the Doctor and Lawyer, The level of organization required in a medical-legal case that accurately reflects the bodily injuries of your patients and the time constraints in rendering an accurate report, Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2020

Medical-Legal Ethical Relationships, Report Writing and Preparing for a Legal Case, Reviewing the facts of the case inclusive of your documentation, the defense medical examiner, medical specialists and the attorney to ensure accurate and consistent reporting, Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2020

Medical-Legal Ethical Relationships, Report Writing and Preparing for a Legal Case, Creating demonstrative evidence, visuals of your patient's bodily injuries inclusive of x-rays, MRI's, CAT Scans and electrodiagnostic findings, the spinal biomechanics of herniated disc with ipsilateral findings and contralateral symptomatology, Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2020

Computerized Mensuration of Spinal Biomechanical Pathology, *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, *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, *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, *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

Trends in Spinal Treatment, *Migration of spinal care for mechanical spine issues from hospitals and medical*

specialist to trauma qualified chiropractors based upon published outcomes. Utilizing imaging studies in spinal biomechanics, pain models and clinical outcomes to determine a conclusive diagnosis, prognosis and treatment plan for triaging in a collaborative environment. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019.

Neurology of Spinal Biomechanics, Understanding the normal of spinal biomechanics and the neurotransmitters required for homeostasis. The interconnected role of Pacinian Corpuscles, Ruffini Corpuscles, Golgi Organ Receptors, Nociceptors, Proprioceptors and Mechanoreceptors in maintaining sagittal and axial alignment in the presence of mechanical pathology. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019.

MRI Age-Dating of Herniated Discs, The literature, academic and clinical standards to age-date herniated discs. The clinical correlation the pain patterns with advanced imaging findings of bone edema, spurs passed upon the Piezoelectric effect of remodeling, high signal on T2 weighted images, Vacuum Discs and Disc heights in determining the time frames of the etiology of spinal disc pathology. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019.

Creating Ethical Collaborative and Medical-Legal Relationships, Understanding the timely triage necessities based upon clinical and imaging outcomes and the documentation required for collaborative physicians to continue care. Ensuring that documentation is complete, reflective of services rendered and clear for third party consideration in an admissible format to be considered in a medical-legal environment. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019.

Central Innervation of Spinal Biomechanical Engineering, Understanding the lateral and ventral horn's innovations of Pacinian Corpuscles, Ruffini Corpuscles, Golgi Organ Receptors, Nociceptors and Proprioceptors and Mechanoreceptors and the pathways through the spinal thalamic tracts through the periaqueductal region, the Thalamus to disparate regions in creating spinal homeostasis, Pacinian Corpuscles, Ruffini Corpuscles, Golgi Organ Receptors, Nociceptors, Proprioceptors and Mechanoreceptors. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019.

Identifying Spinal Pathology of MRI, Utilizing T1, T2 STIR and Gradient Studies in determining myelomalacia, intra and extra-dural tumors and systemic disease patterns affecting the spinal cord. When to use contrast post-operatively in identifying discal structures vs. adhesions on postoperative advanced imaging. MRI interpretation of herniated, circumferential bulges, focal bulges, protruded, extruded, comminuted, sequestered and fragmented discs. When you consider a neurosurgical consultation based upon the correlation of imaging and clinical findings. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019.

Evaluation and Management, An overview of the evaluation and management process inclusive of utilizing electronic medical records to conclude evidenced-based conclusion with the utilization of macros. The importance of adhering to an academic standard and considering co-morbidities, Cleveland University, Kansas City, Academy of

Chiropractic, Post-Doctoral Division, Long Island, NY, 2019.

Evaluation and Management, *Concluding a chief complaint, history and what needs to be considered in a physical examination. This covers the required elements for chief complain, history of present illness, review of systems, and past, family, and/or social history. This module also covers the following components of a physical examination: observation, palpation, percussion, and auscultation.* Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019.

Evaluation and Management, *Coding and Spinal Examination: Detailing 99202-99205 and 99212-99215 inclusive of required elements for complaint billing. It reviews the elements for an extensive review of systems, cervical and lumbar anatomy and basic testing. The course also covers the basics of vertebra-basilar circulation orthopedic assessment.* Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019.

Evaluation and Management: *Neurological Evaluation. Reviewing complete motor and sensory evaluation inclusive of reflex arcs with an explanation of Wexier Scales in both the upper and lower extremities. The course breaks down testing for upper and lower motor neuron lesions along with upper and lower extremity motor and sensory testing examinations.* Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019.

Evaluation and Management, *Documenting Visit Encounters: Forensically detailing the S.O.A.P. note process for visit encounters and discussing the necessity for clinically correlating symptoms, clinical findings and diagnosis with the area(s) treated. It also details how to modify treatment plans, diagnosis, document collaborative care and introduced test findings between evaluations.* Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019.

Evaluation and Management, *Case Management and Treatment Orders: This module discusses how to document a clinically determined treatment plan inclusive of both manual and adjunctive therapies. It discusses how to document both short-term and long-term goals as well as referring out for collaborative care and/or diagnostic testing. It also includes how to prognose your patient and determine when MMI (Maximum Medical Improvement) has been attained.* Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019.

Connective Tissue Pathology, Spinal Biomechanics as Sequella to Trauma, MRI Spine Interpretation, Ordering Protocols & Triaging the Injury. *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 sequella 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. *Integrated automated mensuration into creating treatment plans and determining maximum medical improvement. A literature-based study of normal vs. abnormal motor unit 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, *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 u201cphysiological mechanismsu201d of how the chiropractic spinal adjustment affects the peripheral and central nervous systems. Subluxation degeneration/wolffu2019s Law will be detailed from a literature perspective combined with the mechanism of subluxation (bio-neuro-mechanical lesion). A literature perspective why u201clong-termu201d 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

Interprofessional Reporting and Case Documentation, *analysis of case flow, patient chart organization and EMR workflows to optimize the success and satisfaction of the patient encounter, feasibility of accurate and timely documentation as well as strategies to provide timely interprofessional clinical communication. Focus was provided on patient, primary care and medical specialty communication beginning at the initial visitation all the way through to the release from care. An internal compliance review to ensure complete documentation based upon the E/M level billed*. Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2018

Documentation of the Trauma and Non-Trauma Case, *Documenting primary and associated complaints, past history, allergies, medications, review of systems, previous treatment, family-social medical histories, previous tests and results, history or previous injuries and illnesses, on the job questionnaire, auto accident questionnaire, vital examination, neurological examination, orthopedic testing, test orders, prognosis and treatment plans. A detailed review of current CPT coding requirements for the proper documentation of E/M visits to properly code for billable patient services. Focused attention was paid to the performance of comprehensive patient history, physical examination, review of systems as well as determining the level of clinical decision making. Analysis of a properly organized E/M report was reviewed to demonstrate proper organization and language use*. Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2018

Documentation, Collaboration, and Primary Spine Care, *An academic basis for documentation that is usual and customary across professions in collaborative care. Maintaining ethical medical-legal relationships based on Voir Dire and Daubert standards to ensuring a u201c4-conersu201d inclusive report. Ensuring Primary Care Status based upon an academic standards*. Cleveland University Kansas City, Chiropractic and Health Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island 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, Long Island, NY, 2018

Triage and Management of the Trauma and Non-Trauma Patient, *Differentially diagnosing spinal issues in the trauma and non-trauma patient inclusive of spinal disc pathology utilizing x-ray, MRI, CAT Scan and clinical evaluations. Collaborative triaging protocols with neurologists, neurosurgeons, orthopedic surgeons, pain management and primary medical care providers with both mechanical and anatomical spinal pathologies*. Academy of Chiropractic, Cleveland University - Kansas City Chiropractic and Health Sciences, Long Island, NY, 2018

Designated Doctor Certification Training Course, *Training for doctors to authorize and certify maximum medical improvement, impairment rating, return to work, and extend of injury. Utilization and application of the AMA Guides to the Evaluation of Permanent Impairment, Official Disability Guidelines – Treatment in Workers Compensation (OGD) and MDGuidelines*. Texas Department of Insurance Division of Workers' Compensation Designed Doctor Outreach and Oversight Section, Austin, TX 2018

Primary Spine Care Qualified, *This qualification includes graduate chiropractic education in healthy and traumatically altered spinal morphology inclusive of osseous, connective tissue and neurological structure, function and pathology. This certifies you are qualified in assessing predictive models in spinal biomechanics and devising engineering paradigms for treatment plans to maximize spinal homeostasis in an evidenced based conclusion. In addition, this qualification acknowledges your expertise in triaging the injured and coordinating collaborative care from the trauma through conclusion of rehabilitation*, Academy of Chiropractic Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island NY, 2017

Orthopedic Testing: Clinical Grand Rounds, *How to integrate orthopedic testing in the clinical setting utilizing both simple and complex patient scenarios. It includes potential stroke, or vertebrobasilar insufficient patients and understanding the nuances in a clinical evaluation with orthopedic testing as a critical part of the evaluation and screening process. How to integrate orthopedic testing in the clinical setting utilizing both simple and complex patient scenarios. It includes potential stroke, or vertebrobasilar insufficient patients and understanding the nuances in a clinical evaluation with orthopedic testing as a critical part of the evaluation and screening process*. Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, 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*. Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2017

Orthopedic Testing: Cervical Spine, *Integration of cervical orthopedic testing in the clinical setting to develop a differential diagnosis. Utilizing radiographic and advanced imaging inclusive of MRI and CAT scan findings to verify tissue pathology suspected by orthopedic testing conclusions and developing a treatment plan as sequelae.* Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, 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.* Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2017

Medical-Legal Insurance Documentation, *Accurate and compliant documentation of history and clinical finding inclusive of functional losses, loss of activities of daily living, duties under duress and permanent loss of enjoyment of life. Prognosing static vs. stable care, gaps in care both in the onset and in the middle of passive care with a focus on detailed diagnosing. The integration of chiropractic academia, the court system and the insurance reimbursers' requirements for complete documentation.* Texas Chiropractic College, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2017

MRI Spine Interpretation and Spinal Biomechanics, *Bulging, herniated, protruded and extruded disc contemporary nomenclature, analysis and differential diagnosis. Connective tissue physiology and pathology with aberrant biomechanical permanent sequelae,* Texas Chiropractic College, Academy of Chiropractic, Melville NY, 2017

Contemporary Literature in Spinal Biomechanics, *Normal vs. pathological biomechanical spinal motion both in a single motor unit and coupling actions. Interdisciplinary approach to mechanical spine issues and evidenced based care paths,* Texas Chiropractic College, Academy of Chiropractic, Melville NY, 2017

Documentation of Spinal Trauma, *Interdisciplinary approaches in documentation of spinal related injuries inclusive of connective tissue disorders and biomechanical failure. Clinically correlating history, imaging, advanced imaging and clinical findings to conclude an accurate diagnosis, prognosis and treatment plan,* Texas Chiropractic College, Academy of Chiropractic, Melville NY, 2017

Contemporary Literature of the Chiropractic Spinal Adjustment, *The bio-neuro-mechanical scientific foundation of spinal lesion and the neurological pathways, both in the lower and upper motor neuron pathways. The autonomic sequella of the vertebral subluxation and the effects of the correction and maintenance of those lesions,* Texas Chiropractic College, Academy of Chiropractic, Melville 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. Texas Chiropractic College, 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

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. Texas Chiropractic College, 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

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. Texas Chiropractic College, 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

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. Texas Chiropractic College, 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: Clinical Grand Rounds, The review of case histories of mechanical spine pathology and biomechanical failures inclusive of case histories, clinical findings and x-ray and advanced imaging studies. Assessing comorbidities in the triage and prognosis of the injured. Texas Chiropractic College, 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: Research Perspectives, The review of current literature standards in spinal trauma pathology and documentation review of biomechanical failure, ligamentous failure and age-dating disc pathology. Texas Chiropractic College, 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 sequella from trauma and the comorbidity of ligamentous pathology. Age-

dating spinal disc pathology in accordance with Wolff's Law. Texas Chiropractic College, 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: 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.* Texas Chiropractic College, PACE Recognized The by 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: Ligament Anatomy and Injury Research and Spinal Kinematics, *Spinal ligamentous anatomy and research focusing on wound repair, future negative sequelae of abnormal tissue replacement and the resultant aberrant kinematics and spinal biomechanics of the spine.* Texas Chiropractic College, 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, Triage and Connective Tissue Injuries and Wound Repair, *Triaging the injured and differentially diagnosing both the primary and secondary complaints. Connective tissue injuries and wound repair morphology focusing on the aberrant tissue replacement and permanency prognosis potential.* Texas Chiropractic College, 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

Accident Reconstruction: Research, Causality and Bodily Injury, *Delta V issues correlated to injury and mortality, side impact crashes and severity of injuries, event data recorder reports correlated to injury, frontal impact kinematics, crash injury metrics with many variables and inquiries related to head restraints.* Texas Chiropractic College, Academy of Chiropractic Post Doctoral Division, 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 reconstruction an accident. The application of the critical documentation acquired from an accident site.* Texas Chiropractic College, Academy of Chiropractic Post Doctoral Division, 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 gets translated to the occupant. Understanding critical documentation of hospitals, ambulance reports, doctors and the legal profession in reconstructing an accident.* Texas Chiropractic College, Academy of Chiropractic Post

Doctoral Division, Long Island, 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.* Texas Chiropractic College, Academy of Chiropractic Post Doctoral Division, Long Island, NY, 2017

Primary Spine Care Symposium – Interprofessional Spine Care, Clinical analysis of anatomic versus biomechanical spine pain and clinical triage protocols. Relating current research trends in the Whole Spine Model of patient including normal versus abnormal sagittal curvature in the adolescent and adult spine, pelvic incidence as a parameter for sagittal balance in the human spine and current methods of assessment. Patient centered approach to Evidenced Based Spine care with a focus on diagnosis, prognosis and triage of the spine pain patient, Texas Chiropractic College Post-Doctoral Division, Academy of Chiropractic Post-Doctoral Division, Melville NY 2017

Primary Spine Care Symposium – Epidemiology of Spine Pain, Review of the current Centers for Disease Control [CDC] data on the frequency of musculoskeletal pain in the United States population with emphasis on pain of spinal origin. CDC guidelines on opioid medication were discussed and correlated to persistent pain syndromes. Research was reviewed showing the importance of managing the spine pain patient properly from the entry point of care with a concentration on maintenance of spinal biomechanics, Texas Chiropractic College Post-Doctoral Division, Academy of Chiropractic Post-Doctoral Division, Melville NY 2017

Primary Spine Care Symposium- Connective Tissue and Spinal Disc Pathology, The morphology and pathology of connective tissue, inclusive of spinal disc disorders and prognosticating wound repair with permanency implications. Disc bulge, herniation, protrusion and extrusion classifications based upon contemporary literature and how to age-date disc pathology, Texas Chiropractic College Post-Doctoral Division, Academy of Chiropractic Post-Doctoral Division, Melville NY 2017

Primary Spine Care Symposium – Physiology and Anatomy of Spinal Manual Adjusting, Understanding the role of mechanoreceptors, proprioceptors and nociceptors with facets, ligaments, tendons and muscles in aberrant spinal biomechanics. MRI and imaging studies of decompressing via a chiropractic spinal adjustment of the bio-neuro-mechanical lesion and its effects on the central nervous system both reflexively and supratentorially, Texas Chiropractic College Post-Doctoral Division, Academy of Chiropractic Post-Doctoral Division, Melville NY 2017

Primary Spine Care Symposium – Medical-Legal Documentation, The contemporary documentation required in a medical-legal environment that is evidenced based and meets the standards of the courts and academia. Utilizing the scientific data to support a diagnosis, prognosis and treatment plan while meeting the admissibility standards based upon a professional's credentials. Texas Chiropractic College Post-Doctoral Division, Academy of Chiropractic Post-Doctoral Division, Melville NY 2017

Clinical Excellence in Chiropractic and Primary Spine Care, Academy of Chiropractic, 2017

Certification in Spinal Biomechanical Engineering, Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2016

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.* Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2016

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.* Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2016

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.* Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2016

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.* Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2016

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.* Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2016

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. Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2016

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.* Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2016

Spinal Biomechanical Engineering: Full Spine Digital Analysis,*Digitalizing and analyzing the full spine images to diagnose pathobiomechanics as sequelae to trauma in relation to ligamentous failure and disc and vertebral pathology as sequelae. 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.* Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2016

New Blood Biomarkers Useful for Concussion Diagnosis,*The utilization of GFAP and UCH-L-1 in determining, traumatic brain injury, mild traumatic brain injury and mild-moderate traumatic brain injury as a triage tool to manage head trauma patients,* Accreditation Council on Continuing Medical Education in cooperation with Medscape, 2016

Primary Spine Care – Central Nervous System Processing of Pain and Physiology,*Central neural pathways of pain and higher cortical responses to pain and the effect of high amplitude-low velocity forces on mechanoreceptors and proprioceptors. The effects of neuropeptides on the hypothalamus, pituitary and adrenal axis when treating patients.* Texas Chiropractic College, Academy of Chiropractic, Academy of Chiropractic, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Melville NY, 2016

Primary Spine Care – MRI, Bone Edema and Degeneration,*The effects of trauma on spinal vertebral segments and the short and long term sequella to morphology. Identifying and diagnosing bone edema, spurring, types of degeneration in assessing biomechanical stability in conjunction with Modic and Pfeiffer changes* Texas Chiropractic College, Academy of Chiropractic, Academy of Chiropractic, Recognized by the PACE Program of the

Primary Spine Care – Hospital and Emergency Room Care, *Identifying spinal lesions inclusive of cord and root lesion through examination and advanced imaging in creating an accurate diagnosis, prognosis and treatment plan to effectively triage in collaboration and coordination with medical specialists and emergency department physicians. Differentially diagnosing and triaging disc degenerative bulges, traumatic disc bulges, protrusion herniations, extrusion herniations and fragmented herniations along with managing traumatically induced pain as sequella to degenerative disc trauma*, Texas Chiropractic College, Academy of Chiropractic, Academy of Chiropractic, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Melville NY, 2016

Certification as a Texas State Designated Workers' Compensation Doctor, Texas Department of Insurance Division of Workers' Compensation Designated Doctor Outreach and Oversight Section, Austin, TX, 2016

Designated Doctor Certification Training Course, *Training for doctors to authorize and certify maximum medical improvement, impairment rating, return to work, and extend of injury. Utilization and application of the AMA Guides to the Evaluation of Permanent Impairment, Official Disability Guidelines – Treatment in Workers Compensation (OGD) and MDGuidelines*. Texas Department of Insurance Division of Workers' Compensation Designated Doctor Outreach and Oversight Section, Austin, TX 2016

Head Trauma, Brain Injury and Concussion, *Brain and head physiology, brain mapping and pathology as a sequella 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*. Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2016

Utilization of Research in the Clinical setting, *Utilizing peer reviewed scientific literature in creating a diagnosis, prognosis and treatment plan for the chronic and acute patient. How to implement and stay current on techniques and technology in healthcare*. Academy of Chiropractic Post Doctoral Division, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Long Island, NY, 2015

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 spondylolesthesis, 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*. Texas Chiropractic College, Recognized by the PACE Program of 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, 2015

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 vertebrae, 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.* Texas Chiropractic College, Recognized by the PACE Program of 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, 2015

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 vertebrae, Schmorl's nodes and herniations. Spinal cord and canal compromise interpretation with management.* Texas Chiropractic College, Recognized by the PACE Program of 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, 2015

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 vertebrae, 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.* Texas Chiropractic College, Recognized by the PACE Program of 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, 2015

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 vertebrae, Schmorl's nodes and herniations. Central canal and cauda equina compromise interpretation with management.* Texas Chiropractic College, Recognized by the PACE Program of 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, 2015

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.* Texas Chiropractic College, Recognized by the PACE Program of 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, 2015

MRI Clinical Application, *The clinical application of the results of space occupying lesions. Disc and tumor pathologies and the clinical indications of manual and adjustive therapies in the patient with spinal nerve root and*

spinal cord insult as sequelae. Texas Chiropractic College, Recognized by the PACE Program of 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, 2015

MRI Methodology of Analysis, *MRI interpretation sequencing of the cervical, thoracic and lumbar spine inclusive of T1, T2, STIR and 3D gradient studies to ensure the accurate diagnosis of the region visualized.* New York Chiropractic Council, Texas Chiropractic College, Recognized by the PACE Program of 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, 2015

MRI Spinal Pathology, *MRI interpretation of bone, intradural, extradural, cord and neural sleeve lesions. Tuberculosis, drop lesions, metastasis, ependymoma, schwannoma and numerous other spinal related tumors and lesions.* Texas Chiropractic College, Recognized by the PACE Program of 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, 2015

MRI Disc Pathology and Spinal Stenosis, *MRI interpretation of bulged, herniated, protruded, extruded, sequestered and fragmented disc pathologies in etiology and neurological sequelae in relationship to the spinal cord and spinal nerve roots.* Texas Chiropractic College, Recognized by the PACE Program of 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, 2015

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.* Texas Chiropractic College, Recognized by the PACE Program of 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, 2015

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.* Texas Chiropractic College, Recognized by the PACE Program of 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, 2015

Diplomate, American Academy of Medical Legal Professionals, 2015

Primary Spine Care, *Neurophysiological central and peripheral nervous systems mechanisms of pain with integrated higher cortical functions of the thalamus, cingulate, amygdala, pre-frontal, motor and sensory cortexes. Trauma and chronic pain care effecting mechanoreceptors, nociceptors and proprioceptors through adjustive therapy based upon evidenced based care and current literature verification,* Texas Chiropractic College, Federation of Chiropractic Licensing Boards, New York State Department of Education Board for Chiropractic, Academy of Chiropractic,

Islandia NY 2015

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

Triaging the Trauma and Non-Trauma Patients: *Correlating clinical findings and the patient history in determining the correct course of care in triaging the patient utilizing orthopedic and neurological evaluations in the clinical setting. Understanding the parameters for immediate referrals vs. following the continuum of care to determine the necessity for referrals.* Academy of Chiropractic Post Doctoral Division, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Long Island, NY, 2015

19th Annual Spine Research Institute of San Diego Scientific Conference, *A review of the entire year of scientific research and publication from the diverse fields of clinical medicine and automotive safety engineering, as well as research coming directly from SRISD and its research affiliate, the Center for Research into Automotive Safety and Health. In addition to the literature indexed by the National Library of Medicine, the conference reviews literature published in the Annual Association for the Advancement of Automotive Medicine Scientific Program, the Annual Conference of the International Research Council on the Biomechanics of Impact, the Annual SAE Stapp Car Crash Conference, the Annual International Traffic Medicine Association Conference, and the Annual International Technical Conference on the Enhanced Safety of Vehicles.* Spine Research Institute of San Diego, Southern California University of Health Sciences, Coronado, CA, 2014

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, even data recorder and graphing of the movement of the vehicle before, during and after the crash. Determining the clinical correlation of forces and bodily injury.* Academy of Chiropractic Post Doctoral Division, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Long Island, NY, 2014

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.* Academy of Chiropractic Post Doctoral Division, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Long Island, NY, 2014

Neurodiagnostic Testing Protocols, Physiology and Indications for the Trauma Patient, *Electromyography (EMG), Nerve Conduction Velocity (NCV), Somato Sensory Evoked Potential (SSEP), Visual Evoked Potential (VEP), Brain Stem Auditory Evoked Potential (BAER) and Visual-Electronystagmosgraphy (V-ENG) interpretation, protocols and clinical indications for the trauma patient.* Academy of Chiropractic Post Doctoral Division, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Long Island, NY, 2014

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 relationship with the medical-legal community.* Academy of Chiropractic Post Doctoral Division, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Long Island, NY, 2014

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.* Academy of Chiropractic Post Doctoral Division, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Long Island, NY, 2014

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.* Academy of Chiropractic Post Doctoral Division, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Long Island, NY, 2014

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 kinesio-pathology, myopathology, neuropathology, and pathophysiology in both a functional and structural paradigm* Academy of Chiropractic Post Doctoral Division, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Long Island, NY, 2014.

Medicolegal Fundamentals for Practitioners and Forensic Experts - Whiplash Injury Biomechanics and Traumatology Module IV, *Reporting, records keeping, medical photography, depositions, arbitrations, testifying in court, using evidence, medicolegal rebuttal, Daubert and Frye, motions in limine.* Spine Research Institute of San Diego, Southern California University of Health Sciences, Houston, TX, 2014

Principles of Impairment Rating and Forensic Reporting - Whiplash Injury Biomechanics and Traumatology Module III, *Critical documentation including intake forms, SOAP notes, re-examinations, and supplemental reports, the narrative report disability questionnaires, independent medical examinations.* Spine Research Institute of San Diego, Southern California University of Health Sciences, Houston TX, 2014

Designated Doctor Certification Training Course, *Training for doctors to authorize and certify maximum medical improvement, impairment rating, return to work, and extent of injury. Utilization and application of the AMA Guides to the Evaluation of Permanent Impairment, Official Disability Guidelines – Treatment in Workers Compensation (OGD) and MDGuideline.* Texas Department of Insurance Division of Workers' Compensation Designed Doctor Outreach and Oversight Section, Austin, TX, 2014

Management Principles in Personal Injury and Forensic Documentation - Whiplash Injury Biomechanics and Traumatology Module II, *In-depth training on accident reconstruction, history taking, physical examination,*

radiographic, CT and MR examination, and electrodiagnostics. Designing a treatment plan, activities of daily living, chiropractic manipulative therapy, physical therapy modalities, treatment of TMD, and maximum medical improvement (MMI). Spine Research Institute of San Diego, Southern California University of Health Sciences, Minneapolis, MN, 2014

Whiplash Advanced Topics: The Fundamental Science - Whiplash Injury Biomechanics and Traumatology Module I, *Comprehensive biomechanics knowledge for forensic experts, including injury impairment scales, brain, neck, and cervical spine trauma mechanisms from motor vehicle crashes. Review of common muscle and joint syndromes, disorders, and criteria for referral and advanced imaging.* Spine Research Institute of San Diego, Southern California University of Health Sciences, Houston TX, 2014

Personal Injury Case and Medical Legal Management, *Understanding Personal Injury Protection and Texas Department of Insurance Auto Insurance laws. Coding, compliance and documentation.* National Education Seminars, Texas Chiropractic Association, Austin, TX, 2013

Texas Designated Doctor and Physician Training, *Utilization and application of the AMA Guides to the Evaluation of Permanent Impairment,, Official Disability Guidelines – Treatment in Workers Compensation (OGD and MDGuideline).*American Academy of Disability Evaluating Physicians, Texas Department of Insurance Division of Workers' Compensation, Austin, TX, 2012

Coding, Compliance, Ethics and Risk Management, *Medicare compliance and Texas chiropractic office compliance.* DC Seminars, Texas Chiropractic Association, San Antonio, TX, 2012

Mechanical Diagnosis and Therapy Part A - The Lumbar Spine, *Mechanical diagnosis and therapy analysis and treatment protocols for the lumbar spine.* The McKenzie Institute, Austin, TX, 2011

Whiplash Trauma and Permanent Soft Tissue Injuries, *Clinical case management for MVA trauma.* Texas Chiropractic College, San Antonio, TX, 2011

Musculoskeletal Practice Integration, *Conservative care to surgical intervention. Multi-specialty care for better patient outcomes.* University of Bridgeport College of Chiropractic, Dallas, TX, 2010

Orthopedic Care in the Primary Care Setting, *Mild trauma triage for spine, upper extremity and lower extremity injuries.* Texas Orthopedics Sports and Rehabilitation Associates, Texas Academy of Family Physicians, Austin, TX, 2009

Medical Legal Ethics, *Texas required ethics and Medicare training for all Texas chiropractors.* Texas Chiropractic Association, Austin, TX, 2009

Certification in Manipulation under Anesthesia, American Academy of Manual and Physical Medicine, University of Bridgeport College of Chiropractic Post Doctoral Education Division, Houston, TX, 2008

Texas Designated Doctor and Physician Training, *Utilization and application of the AMA Guides to the Evaluation of Permanent Impairment,.*American Academy of Disability Evaluating Physicians, Austin, TX, 2008

Spinal cord and the peripheral nervous system, *Clinical application with diagnosis and management of the spinal cord and peripheral nervous system*. Carrick Institute of Graduate Studies, Pasadena, TX, 2006

Publications

Aaron D. Smith DC, Mark Studin DC, Randall Loftus MD, John Strom DC, Geoffrey Gerow DC. "Spinal Cord Myelomalacia Following MVC: A Case Report". Medpix: National Institute of Health/National Library of Medicine. Published January 22, 2024.

Selected Teaching Positions

Adjunct Faculty, Department of Human Anatomy and Physiology, Community College of Southern Nevada, Las Vegas, NV, 2006

Memberships

National Spine Management Group, Member 2020 – Present

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

American Academy of Medical and Legal Professionals, Member, 2014 - Present

Academy of Chiropractic, Member, 2014 - Present

Texas Chiropractic Association, Member, 2008 - Present

American Academy of Pain Management, Member, 2008 - 2010

American Chiropractic Association, Member, 2007 – Present