

Matthew Collins, D.C., F.P.S.C.

Fellow, Primary Spine Care

Board Certified Diplomate, American Chiropractic Rehabilitation Board

Board Certified Independent Chiropractic Examiner, American Board of Independent Medical Examiners

Twin Cities Headache Neck & Back

245 North Ruth Street, Suite 205

St. Paul, MN 55119

Phone: 651-925-5530

Fax: 651-493-1980

Cellular: 763-245-9024

Email: dr.collins@tc-hnb.com

CURRICULUM VITAE

UNDER GRADUATE EDUCATION

B.S. in Human Biology, Northwestern Health Sciences University, Bloomington, MN, 1998

CHIROPRACTIC EDUCATION

Doctor of Chiropractic; Northwestern Health Sciences University, Bloomington, MN, 1999

BOARD CERTIFICATION

Board Certified Diplomate, American Chiropractic Rehabilitation Board, 2004

Board Certified Independent Chiropractic Examiner, American Board of Independent Medical Examiners, 2019

FELLOWSHIP

Fellow, Primary Spine Care; *A two-year post graduate 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 to be 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

LICENSURE

Independent Examiner Registration, State of Minnesota, MBCE License #865, 2010-present

National Board of Chiropractic Examiners; Acupuncture Certificate of Attainment, 2009

Acupuncture Registration, State of Minnesota, MBCE License #860, 2009-present

Doctor of Chiropractic, State of Minnesota, MBCE License #3759, 1999-present

National Board of Chiropractic Examiners; Part I, 1997; II, III, IV and Physiotherapy, 1998

CERTIFICATES & ADDED QUALIFICATIONS; SELECTED

Evaluation & Management Qualification, Cleveland University, Kansas City, 2024

MRI Interpretation Review Qualification, 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), 2022

Trauma Qualification, Cleveland University Kansas City; Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019

Primary Spine Care Qualification, Cleveland University Kansas City; Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019

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

Certification; Cox Decompression Adjusting and Manipulation; National University of Health Sciences; Lincoln College of Professional, Graduate and Continuing Education, Chicago, IL; Lumbar 2012, Cervical 2017, Thoracic 2023

Certification in MRI Spine Interpretation; Federation of Chiropractic Licensure Boards, ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2012

Acupuncture Certificate of Attainment; National Board of Chiropractic Examiners, 2009

Advanced Certificate of Competency, Whiplash Injury Biomechanics & Brain Injury Trauma; Spine Research Institute of San Diego, 2009

Acupuncture Certificate; Northwestern Health Science University, Bloomington, MN, 2009

Certificate of Qualification, Chiropractic Radiology; Northwestern Health Sciences University, Bloomington, MN, 1999

Certificate of Qualification, Clinical Practice, two-year internship; Northwestern Health Sciences University, Bloomington, MN, 1999

SELECTED MEMBERSHIPS

American Board of Independent Medical Examiners, 2019-present

Academy of Chiropractic, 2018-present

American Chiropractic Rehabilitation Board, 2004-present

PROFESSIONAL EXPERIENCE

Clinic Director, Chiropractor; Twin Cities Headache Neck & Back, St. Paul, MN, 2007 – present

HealthEast Spine Conference; multidisciplinary grand rounds, St. Paul, MN, 2006- 2016

Associate Clinical Faculty, Community Based Internship Program; Northwestern Health Sciences University, Bloomington, MN 2010 - 2013

EvaluMed, Chiropractic Consultant, Edina, MN, 2010- 2013

Chiropractor; Premier Health of Roseville, Roseville, MN, 2006 –2007

Clinic Director; Chiropractor, Snelling Chiropractic Clinic, P.A., St. Paul, MN, 2000 – 2006

Chiropractor; Chiropractic Practice Relief, Blaine, MN, 1999 –2000

SELECTED TEACHING

Chiropractic management of recalcitrant post trauma spine pain associated with multilevel spine fractures in a female teenager [A Case Study]; Cox Honors Seminar, Co-lecturer, National University of Health Sciences & F/D Enterprise LLC, San Juan, Puerto Rico, 2024

Sprain/Strain Injuries: Definition, Mechanism of Injury & Long Term Consequences; MN Association for Justice, St. Paul, MN, 2021

Age Dating Disc Herniations & Diagnostic Dilemma's In Spine Injury: Where is the Pain Coming From?; Continuing Legal Education, co-presented with CDI radiologists, Roseville, MN 2019

Acute Disabling Sciatica: Assessment & Treatment Without The Benefit of Imaging [A Case Study]; Cox Honors Seminar Part III, Co-lecturer, National University of Health Sciences, Tampa, FL, 2017

Diagnostic Dilemma's In Spine Injury: Where is the Pain Coming From?; Continuing Legal Education, co-presented with CDI radiologists, Roseville, MN 2015

Diagnostic Dilemma's In Spine Injury: Where is the Pain Coming From?; Continuing Legal Education, co-presented with CDI radiologists, Minneapolis, MN 2014

Diagnostic Dilemma's In Spine Injury: Where is the Pain Coming From?; Continuing Legal Education, co-presented with CDI radiologists, St. Paul, MN 2013

Disc Herniations: Clinical Relevance, Common Pitfalls & Hidden Gems. Continuing Legal Education, Minneapolis, MN 2012

Disc Herniations: Clinical Relevance, Common Pitfalls & Hidden Gems. Continuing Legal Education, Little Canada, MN 2012

Diagnostic Dilemma's In Spine Injury: Where is the Pain Coming From?; Continuing Legal Education, co-presented with CDI radiologists, Minneapolis, MN 2012

Diagnostic Dilemma's In Spine Injury: Where is the Pain Coming From?; Continuing Legal Education, co-presented with CDI radiologists, Minneapolis, MN 2011

Diagnostic Dilemma's In Spine Injury: Where is the Pain Coming From?; Continuing Legal Education, co-presented with CDI radiologists, St. Paul, MN 2011

Chiropractic Care: Role in Conservative Spine Management: HealthEast 8th Annual Spine Care Symposium; St. Josephs Hospital, St. Paul, MN 2010

Diagnostic Dilemma's In Spine Injury: Where is the Pain Coming From?; Continuing Legal Education, co-presented with CDI radiologists, St. Paul, MN 2010.

How to Choose Diagnostic & Therapeutic Injections for Conservative Pain Management; CDI MN, co-presented with interventional neuroradiologist Mark Myers, M.D., St. Paul, MN 2010

Diagnostic Dilemma's In Spine Injury: Where is the Pain Coming From?; Continuing Legal Education, co-presented with CDI radiologists, St. Paul, MN 2009

Clinical Pearls in the Management of Cervicogenic Headaches; 121 Teaching Library of Northwestern Health Sciences University, Bloomington, MN 2009

Use of Bone Scans & the Trauma Patient, A Case Study; Dan Dock Seminars, Northwestern Health Sciences University, Bloomington, MN 2009

Cervicogenic Headaches; Institute for Athletic Medicine, Bandana Square, St. Paul, MN, 2006

PUBLICATIONS

Collins ME, Studin M, Loftus R, Wilfong S, Sperrazza J, Gerow G (2024). *Shoulder Labral Tear and Rotator Cuff Tear: Diagnosis And Chiropractic Management*. Medpix: National Institute of Health/National Library of Medicine. Published May 28, 2024

Collins ME, Studin M, Cox J, Loftus R, Wilfong S, Gerow G (2024). *Improved C3-4 Disc Herniation Recovery with Conservative Care Due To An Over Read Of The MRI By Treating Doctor Of Chiropractic With Advanced Trauma And MRI Interpretation Credentials*. Medpix: National Institute of Health/National Library of Medicine. Published April 16, 2024

Collins ME, Misukanis TM (2005). *Chiropractic management of a patient with post traumatic vertigo of complex origin*. Journal of Chiropractic Medicine, 1(4), 32-38.

SELECTED AWARDS

Top Chiropractors Award, Minnesota Monthly Magazine, 2015

SELECTED POST-GRADUATE EDUCATION

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.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint

Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, 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.* PACE Approved for the Federation of Chiropractic Licensing Board, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2024

Advanced AMA Guides to the Evaluation of Permanent Impairment, 6th Edition Case Studies. *Utilize skills to perform complex case evaluations of musculoskeletal disorders. Demonstrate skills in evaluating multiple trauma cases. Evaluate and manage difficult impairment evaluations. Improve the quality of medical reports to better understand the AMA Guides.* American College of Independent Medical Examiners and American Board of Independent Medical Examiners, Marshall University Joan C. Edwards School of Medicine, Huntington, WV, 2024

A Certification Review and AMA Guides to the Evaluation of Permanent Impairment, 6th Edition. *Study of the key concepts, principles and underlying philosophy of the AMA 6th Edition with study of the AMA 6th Edition Impairment methodology. Discuss new developments in the AMA 6th Edition. Differentiate symptoms, pathology, impairment and disability. Related clinical data to case issues and discuss skills needed to perform evaluations. Perform musculoskeletal permanent impairment ratings according to the AMA Guide. Utilize skills to perform complex case evaluations of musculoskeletal disorders.* American College of Independent Medical Examiners and American Board of Independent Medical Examiners, Marshall University Joan C. Edwards School of Medicine, Huntington, WV, 2024

MPI Master Series: The Shoulder. *An in-depth study of the shoulder girdle and its relationship to the spine and upper quadrant, with an integrated understanding of the shoulder girdle and how to functionally assess and treat conditions of this complex area. Topics include biomechanics of the shoulder girdle, functional assessment (movement screens) of the shoulder girdle, clinically useful orthopedic tests for the shoulder girdle and imaging options for the shoulder and cervical spine. Clinical conditions covered include cervicobrachial presentations, labral injuries, impingement syndromes and rotator cuff conditions.* National University of Health Sciences and MPI Seminars, Bloomington, MN 2024

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, 2024

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, 2024

Non-Specific Spine Pain, Chiropractic and Outcomes, *Analyzing neuro-biomechanical pathological lesions define 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, 2024

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, 2024

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, 2024

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, Phirrman 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, 2024

Honors Course; *Spinal research updates regarding the biomechanics, diagnosis, and treatment of spine pain conditions and their related extremity pain issues: lumbar, cervical, thoracic, lumbar*

radiculopathy/sciatica, cervical radiculopathy/arm pain, spinal stenosis, post-surgical/persistent spine pain syndrome/FBSS, spinal gout, etc. SMM (spinal manipulation and mobilization) effects on spine, body, afferentation, and cholinergic/adrenergic effects. SMM's place in healthcare: acute, chronic, post-surgical, pre-surgical, non-surgical care. National University of Health Sciences & F/D Enterprise LLC, San Juan, Puerto Rico, 2024

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, 2024

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, 2024

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, 2024

Dry Needling Introduction; Distinguish the meaning and implications of many important terms pertaining to the clinical practice of filiform needling therapies. Categorize the most common types of trigger points. Incorporate myofascial stress patterns into previously learned myofascial frameworks. Compare & contrast the legal, theoretical & practical commonalities & differences associated with the filiform needling therapies of dry needling & acupuncture. AcuPractice Seminars & ChiroCredit, Randor, PA, 2024

Dry Needling Clean & Safe Needle Handling; Demonstrate Clean & Safe needle handling, application, & disposal. Recognize and reduce risks To Dry Needle Providers. Recognize and reduce risks To Dry Needle Patients. Integrate Dry Needling into an Existing Practice. Document Dry Needling Diagnosis & Treatment. AcuPractice Seminars & ChiroCredit, Randor, PA, 2024

Dry Needling Needle Selection & Approaches; Identify common filiform needle sizes and types. Select appropriate filiform needles for various applications. Integrate trigger point releasing concepts &

practices. Apply effective trigger point releasing needle techniques. Outline common myofascial stress patterns. AcuPractice Seminars & ChiroCredit, Randor, PA, 2024

MRI Spinal Anatomy, Protocols and Disc Pathology, *Normal anatomy of axial and sagittal views utilizing T1, T2, gradient and STIR sequences of imaging. Degeneration and annular fissures of discs in both trauma and non-trauma patients and the biochemical properties of joints in age dating pathology. Disc bulges from degenerative and sequela to osseous issues, herniation pathology and protrusion, extrusion, migrated and sequestered variations. Clinical scenarios as sequela to disc and pre-existing pathologies.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2023

MRI Spine Interpretation, *Herniated, bulged, extruded, protruded, sequestered and degenerative discs. The morphology of a pathological disc vs. normal morphology and the sequences required including T1, T2 and STIR for all spinal regions. Modic 1-2-3 changes detailed and the traumatic relationship.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2023

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.* Cleveland University Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2023

Traumatic Brain Injury and Concussion Overview: *This section is an in-depth overview of traumatic brain injury in concussion. It discusses that all brain injuries are traumatic and dispels the myth of a “mild traumatic brain injury.” Also, this covers triage protocols and the potential sequela of patients with traumatic brain injuries.* Cleveland University - Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2023

Head Trauma and Traumatic Brain Injury Part 1: *This section discusses gross traumatic brain injuries from trauma and significant bleeding with both epidural and subdural hematomas. There are numerous case studies reviewed inclusive of neurosurgical intervention and postsurgical outcomes.* Cleveland University - Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2023

Head Trauma and Traumatic Brain Injury Part 2: *This section continues with multiple case studies of gross traumatic brain injuries from trauma requiring neurosurgical intervention and also discusses recovery sequela based upon the significance of brain trauma. This module also concludes with*

concussion protocols in traumatic brain injury short of demonstrable bleeding on advanced imaging. Cleveland University - Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2023

Concussion And Electroencephalogram Testing: This this section covers concussion etiology and cognitive sequela where gross bleeding has not been identified on advanced imaging. It discusses the significance of electroencephalogram testing in determining brain function and pathology (if present). This module also covers the understanding of waveforms in electroencephalogram testing in both normal and abnormal scenarios. Cleveland University - Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2023

Concussion And Electroencephalogram Testing Pathological Results: This module covers amplitude, conduction and conduction delays as sequela to traumatic brain injury to diagnose concussion and traumatic brain injury in the absence of gross bleeding and advanced imaging. This section covers electroencephalograms and event-related potentials which measures the brain response that is a direct result of specific sensory or motor events. It is a stereotype electrophysiological response to a stimulus and provides a noninvasive means of evaluating brain function. In this module multiple case studies are discussed with ensuing triage protocols pending the results. Cleveland University - Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2023

Electrodiagnostics: Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis & Interpretation: Anatomy and Physiology of Electrodiagnostics: An in-depth review of basic neuroanatomy and physiology dermatomes and myotomes to both the upper and lower extremities and the neurophysiology of axons and dendrites along with the myelin and function of saltatory for conduction. The sodium and potassium pump's function in action potentials. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY, 2023

Electrodiagnostics: Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis & Interpretation: Nerve Conduction Velocity (NCV) Part 1: Nerve conduction velocity testing, the equipment required and the specifics of motor and sensory testing. This section covers the motor and sensory NCV procedures and interpretation including latency, amplitude (CMAP) physiology and interpretation including the understanding of the various nuances of the wave forms. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY, 2023

Electrodiagnostics: Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis & Interpretation: Nerve Conduction Velocity (NCV) Part 2: Compound motor action potentials (CMAP) and sensory nerve action potentials (SNAP) testing and interpretation including the analysis and diagnosis of the wave forms. It also covers compressive neuropathies of the median, ulnar and posterior

tibial nerves; known as carpal tunnel, cubital tunnel and tarsal tunnel syndromes. This section offers interpretation algorithms to help understand the neurodiagnostic conclusions. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY, 2023

Electrodiagnostics: Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis & Interpretation: Needle Electromyogram (EMG) Studies: *The EMG process, inclusive of how the test is performed and the steps required in planning and electromyographic study. This covers the spontaneous activity of a motor unit action potential, positive sharp waves and fibrillations. The insertional activity (both normal and abnormal), recruitment activity in a broad polyphasic presentation and satellite potentials. This covers the diagnosing of patterns of motor unit abnormalities including neuropathic demyelinated neuropathies along with acute myopathic neuropathies. This section also covers the ruling out of false positive and false negative results. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY, 2023*

Electrodiagnostics: Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis & Interpretation: Overview of EMG and NCV Procedures, Results, Diagnoses and Documentation. *The clinical incorporation of electrodiagnostic studies as part of a care plan where neuropathology is suspected. It also covers how to use electrodiagnostics in a collaborative environment between the chiropractor as the primary spine care provider and the surgeon, when clinically indicated. This section covers sample cases and health conclude and accurate treatment plans based upon electro-neurodiagnostic findings when clinically indicated. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island NY, 2023*

Evaluation and Management, *An overview of the evaluation and management process inclusive of utilizing electronic medical records to conclude evidenced-based conclusions with the utilization of macros. The importance of adhering to an academic standard and considering co-morbidities. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2023*

Evaluation and Management, Concluding a chief complaint, history and what needs to be considered in a physical examination. *This covers in dept the required elements for chief complain, history of present illness, review of systems, and past, family, and/or social history. This module also covers the following components of a physical examination: observation, palpation, percussion, and auscultation. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2023*

Evaluation and Management, Coding and Spinal Examination: *Detailing 99202-99205 and 99212-99215 inclusive of required elements for compliant billing. It reviews the elements for an extensive review of systems, cervical and lumbar anatomy and basic testing. The course also covers the basics of vertebra-basilar circulation orthopedic assessment. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2023*

Evaluation and Management, Neurological Evaluation: *Reviewing complete motor and sensory evaluation inclusive of reflex arcs with an explanation of Wexler Scales in both the upper and lower extremities. The course breaks down testing for upper and lower motor neuron lesions along with upper and lower extremity motor and sensory testing examinations.* Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2023

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 introduce test findings between evaluations.* Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2023

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, 2023

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

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

Case Management and Documentation - *Spinal Disc Microanatomy, The understanding of the human spinal discal elements; annulus, nucleus pulposis, cartilaginous end plates inclusive of the neurology, visualization, differentiation from the neonate to adults. The understanding of the etiology of Modic changes on MRI and how spinal biomechanics are altered.* Cleveland University Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2023

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

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

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

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

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

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

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

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

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

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

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

Documentation, Demonstrative and Compliance, *Elements of Evaluation and Management codes 99202-99203-99204-99205, inclusive of complexity of management and time components. Demonstrative documentation of spinal-related pain generators; spinal cord, thecal sac, myelomalacia, spinal nerve root insult, connective tissue, recurrent meningeal nerves.* 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

Thoracic Flexion Distraction Spine Manipulation Using Cox Protocol, Certification in Assessment & Management, *Biomechanics of the thoracic spine, evidence based assessment and diagnosis, chemical and mechanical pain generation, discogenic pain diagnosis and treatment, radicular symptom diagnosis*

and treatment. Reviewed diagnostic and examination points such as Carnett's sign. Reviewed clinical conditions such as thoracic disc herniation, hyperkyphosis, Scheuermann's disease, DISH, compression fracture, upper thoracic syndrome, and clinical outcome studies of spine pain. National University of Health Sciences & F/D Enterprise LLC, West Palm Beach, FL, 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

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, New York, 2022

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

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

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

MRI Spine Clinical Grand Rounds, *Visualizing, diagnosing, and documenting cervical spine sequencing, disc extrusion type herniations, neural canals, disc degeneration, thecal sac compression, central canal stenosis, cord displacement, reversal of cervical curve, Chiari 1 malformation. Identifying spinal*

biomechanical failure in MRI sequencing, with visualizing ligamentous pathology as cause for failure. Differentially diagnosing recent vs. older trauma based upon edematous signal in T1, T2, and STIR images. Academy of Chiropractic Post-Doctoral Division, Accreditation Council for Continued Medical Education in conjunction with The State University of New York at Buffalo, Jacobs School of Medicine and Biomedical Sciences, Cleveland University - Kansas City, Long Island, NY, 2022

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

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

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

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

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

Extremity MRI & X-ray 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, 2022

Extremity MRI & X-ray 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, 2022

Extremity MRI & X-ray 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, 2022

Extremity MRI & X-ray 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, 2022

Extremity MRI & X-ray 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, 2022

Extremity MRI & X-ray 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, 2022

Extremity MRI & X-ray 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, 2022

Extremity MRI & X-ray 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, 2022

Extremity MRI & X-ray 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, 2022

Extremity MRI & X-ray Interpretation of the Ankle, *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, 2022

Extremity MRI & X-ray 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, 2022

Case Management, Spinal MRI and Documentation Documenting Herniated Discs, Age-Dating Disc Pathology, and Connective Tissue Pathology as Sequella to Trauma , *Herniated Discs and Connective Tissue Pathology, differentially diagnosing herniated discs vs. normal and bulging discs and protruded, extruded and fragmented discs. Normal vs. Pathological connective tissues and age-dating herniated discs.* Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2022

Case Management, Spinal MRI and Documentation, Case Management of Traumatic Spinal Injuries, *Understanding flexion-extension cervical injures and diagnosing connective tissue pathology. Determining impairments and the literature-based standard for permanent injuries.* Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2022

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 non-disc spinal injuries. Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2022

Case Management, Spinal MRI and Documentation, Herniated Discs and Permanent Brain Malfunction & Biomechanical Failure, *A case-study of a post-traumatic herniated disc and related brain malfunction supported by contemporary literature, MRI acquisition, and necessity protocols.* Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2022

Case Management, Spinal MRI and Documentation, Demonstrative Documentation of Disc Herniation and MRI Physics, *Understanding the documentation requirements to demonstratively show spinal disc lesions in reporting pathology. Understanding the physics of a nucleus resonating in T1 and T2 weighted imagery.* Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2022

Case Management, Spinal MRI and Documentation, Post-Traumatic Herniated Discs, Related Migraines-Headaches & Strain/Sprain Permanencies, *Relationship of headaches, and migraines to cervical spine disc herniation, clinical rationale for ordering MRI's and the relationship of ligamentous pathology to spinal trauma.* Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2022

Case Management, Spinal MRI and Documentation, Documentation of Low-Speed Crashes in Determining Etiology of Serious Bodily Injuries, *Documentation requirements during the evaluation, and management encounter to understand the etiology of spinal injuries. Having a complete understanding the forces involved to conclude a differential diagnosis, while concurrent ruling malingers, if applicable.* Cleveland University Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 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, 2021

Chiropractic vs. Physical Therapy vs. Medical Case Management and Outcomes, *Analyzing 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, 2021

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, 2021

Ligament/Connective Tissue Physiology and Pathology, *Master-Class in ligaments; anatomy, physiology, vascularization, neurological innervation, tissue repair and how they all relate to clinical practice. Ligament pathology correlating to the mechanisms of patho-neuro-biomechanical lesions (vertebral subluxation complex). Also, how ligaments play a critical role in the chiropractic spinal adjustment and in defining the chiropractic spinal adjustment mechanisms.* Academy of Chiropractic Post-Doctoral Division, Cleveland University- Kansas City, Long Island, NY, 2021

Stroke Evaluation and Risk Factors in the Chiropractic Practice, *Diagnosing, triaging, and documenting headaches, migraines, and vascular incidents (stroke) in the primary provider's office. Imaging protocols based upon history and clinical presentation will be presented, along with analyzing imaging findings in determining the etiology. There will be an extensive question and answer session following the instructional presentation.* Academy of Chiropractic Post-Doctoral Division, Cleveland University- Kansas City, Long Island, NY, 2021

Age-Dating Herniated Discs and Trauma, *Age dating herniated discs and trauma is a critical skill for an expert in spine. It combines the clinical skills of interpreting X-ray, MRI, and other imaging modalities with a clinician's understanding of joint pathology. This level of expertise is critical when collaborated with other physicians or working in the medical-legal environment as an expert. Age dating pathology is also central to creating a prognosis on your patient's recovery and must be evidence-based in rationale.* Academy of Chiropractic Post-Doctoral Division, Cleveland University- Kansas City, Long Island, NY, 2021

Clinical Grand Rounds in Spinal Biomechanics, *Case reviews utilizing E/M, MRI, and x-ray mensuration report to conclude an accurate diagnosis, prognosis, and treatment plan. Common diagnosis requiring interprofessional collaboration with a discussion of diagnostic dilemmas and proper communication methods.* Academy of Chiropractic Post-Doctoral Division, Cleveland University- Kansas City, Long Island, NY, 2021

Neurosurgical Grand Rounds, *A clinical discussion of collaborating with neurosurgeons on spinal cord and spinal nerve root co-morbidities. Triaging cases with herniated, protruded, extruded, fragments discs and differentially diagnosing tethered cord, syringomyelia, traumatic Schmorl's Nodes, Myelomalacia, spinal cord edema, vacuum disc and other intra, and extra-dural lesions.* Academy of Chiropractic Post-Doctoral Division, Cleveland University- Kansas City, Long Island, NY, 2021

Clinical Grand Rounds – Chiropractic Management of Cervical Myelopathy - *Review of all relevant spinal anatomy in the cervical and lumbar spine including vertebral bodies, central canal, neuroforamen, ligamentum flavum, anterior and posterior longitudinal ligaments, facet capsule, interspinous ligament,*

supraspinous ligament and spinal cord anatomy. Review of spinal cord anatomy included white and gray matter, ventral and dorsal nerve roots, spinal nerve including the dura mater, arachnoid mater and pia mater. Specific review of patient history, mechanism of injury, physical examination including neurological and orthopedic evaluation as well as criteria for ordering and reading advanced imaging such as MRI and CT were presented in relation to cervical myelopathy, spinal cord compression and myelomalacia. Patient centered; consensus driven clinical diagnosis including interprofessional communication was presented, specific presentation relating to diagnostic outcomes and management. Attention was given to MRI and CT myelogram in both the uncomplicated and complicated patient. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards - PACE. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences – 2021.

Clinical Grand Rounds – Chiropractic Management of Lumbar Facet Syndrome - Discussion of the clinical presentation of lumbar facet syndrome with specific attention paid to the pathogenesis and differential diagnosis of lumbar disc herniation, disc bulge and radiculopathy. Review of patient history, mechanism of injury, physical examination including neurological and orthopedic evaluation as well as criteria for ordering and reading advanced imaging such as MRI and CT were presented. Discussion involving ligamentous structures such as interspinous ligament, supraspinous ligament and facet capsules was presented. Plain film static and dynamic radiographic studies were reviewed as well as specific sclerotogenous referral patterns of facet mediated pain. Patient centered; consensus driven clinical diagnosis including interprofessional communication was presented, specific presentation relating to diagnostic medial branch blocks and pain management referral was emphasized. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards - PACE. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences – 2021.

Clinical Grand Rounds – Chiropractic Management of Cervical Facet Syndrome – Review of the pathogenesis and morphological presentation of cervical facet syndrome. Outline of patient history, physical examination including neurological and orthopedic evaluation as well as criteria for ordering and reading advance imaging such as MRI and CT were presented. Discussion involving ligamentous structures such as interspinous ligament, supraspinous ligament and facet capsules was presented. Plain film static and dynamic radiographic studies were reviewed as well as specific sclerotogenous referral patterns of facet mediated pain. Patient centered, consensus driven clinical diagnosis including interprofessional communication were presented, specific presentation relating to diagnostic medial branch blocks and pain management referral was emphasized. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Medical Sciences, 2021.

Clinical Grand Rounds – Chiropractic Management of Lumbar Disc Herniation – Review of the pathogenesis and morphological presentation of lumbar intervertebral disc herniation. Outline of patient history, physical examination including neurological and orthopedic evaluation as well as criteria for ordering and reading advance imaging such as MRI and CT were presented. Plain film static and dynamic radiographic studies were reviewed. Patient centered, consensus driven clinical diagnosis

including interprofessional communication were presented. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Medical Sciences, 2021.

Clinical Grand Rounds – Chiropractic Management of Cervical Radiculopathy – Characterization of cervical radiculopathy in terms of neurological dysfunction including compression and inflammation of the spinal nerves was reviewed. Cervical spondylosis and intervertebral disc herniation as causative factors were presented and discussed. Conservative care as well as surgical intervention were presented and correlated to response to care and clinical findings. Outline of patient history, physical examination including neurological and orthopedic evaluation as well as criteria for ordering and reading advanced imaging such as MRI and CT were presented. Plain film static and dynamic radiographic studies were reviewed. Patient centered, consensus driven clinical diagnosis including interprofessional communication were presented. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Medical Sciences, 2021.

Causation, What does the science say?, Discuss the difficulties in interpreting common degenerative disease findings as causally based using spinal injuries as case examples. Define standards for causality used in medical legal contexts. Interpret medical evidence and scientific literature for causality analysis. Application of steps for the medical legal causality analysis to cumulative trauma and other controversial cases. American College of Independent Medical Examiners and American Board of Independent Medical Examiners, Marshall University Joan C. Edwards School of Medicine, Orlando, FL, 2020

Traumatic Brain Injuries and Concussion: How to Evaluate Them, Discussion of the diagnostic criteria and knowledge of the various somatic, behavioral and cognitive complaints which accompany traumatic brain injuries. Apply this knowledge regarding the diagnosis of post concussive syndrome, commonly encountered neuropsychological tests and recovery profile following concussion to clinical practice, based on current scientific literature. American College of Independent Medical Examiners and American Board of Independent Medical Examiners, Marshall University Joan C. Edwards School of Medicine, Orlando, FL, 2020

Diagnosing and Case Management, The requirements for diagnosing based upon in 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, PACE Approved for the Federation of Chiropractic Licensing Boards, Long Island, NY, 2020

Diagnosing and Case Management, The requirements 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, PACE Approved for the Federation of Chiropractic Licensing Boards, Long Island, NY, 2020

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

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

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

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

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

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

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. Cleveland University – Kansas City, 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.* PACE Approved for the Federation of Chiropractic Licensing Boards, 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 specialists 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, Chiropractic and Health Sciences, 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, Chiropractic and Health Sciences, 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 patters with advanced imaging findings of bone edema, spurs based 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 the spinal disc pathology.* Cleveland University Kansas City, Chiropractic and Health Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2019

A Doctors Guide to Practical Use of the AMA Guides to the Evaluation of Permanent Impairment, 5th Edition. *Study of the key concepts, principles and underlying philosophy of the AMA 5th Edition with study of the AMA 5th Edition Impairment methodology. Impairment assessment steps and applications along with limitations regarding the spine, upper extremity, lower extremity, head injury/neurology.* American College of Independent Medical Examiners and American Board of Independent Medical Examiners, Marshall University Joan C. Edwards School of Medicine, Orlando, FL, 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 the documentation is complete, reflective of services rendered and clear for third party consideration in an admissible format to considered in a medical-legal environment.* Cleveland University Kansas City, Chiropractic and Health Sciences, 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, Proprioceptors and Mechanoreceptors* and the pathways through the spinal thalamic tracts through the periaqueductal region, the Thalamus into the Occipital, pre-frontal, sensory and motor cortexes and the efferent back through the Thalamus to disparate regions in creating spinal homeostasis, *Pacinian Corpuscles, Ruffini Corpuscles, Golgi Organ Receptors, Nociceptors, Proprioceptors and Mechanoreceptors*. Cleveland University Kansas City, Chiropractic and Health Sciences, 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 to consider a neurosurgical consultation based upon the correlation of imaging and clinical findings.* Cleveland University Kansas City, Chiropractic and Health Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2019

Neurology of Ligament Pathology- Normal Morphology and Tissue Damage, *Connective tissue morphology, embryology and wound repair as sequela 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, 2019

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, 2019

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, 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 qualification in assessing predictive models in spinal biomechanics and devising engineering paradigms for treatment plans to maximize spinal balance and homeostasis in an evidenced based conclusion. In addition, this qualification acknowledges 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, 2019

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.* Cleveland University – Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2019

Connective Tissue Spinal Disc Permanent Pathology, Primary Spine Care, *Herniated, bulged, protruded and extruded discs, etiology and morphology. Age-dating disc pathology inclusive of Modic changes, piezoelectric effect, Wolff's Law and radicular clinical presentation.* Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY 2019

Connective Tissue Pathology and Research, Primary Spine Care, *Utilization in spinal models considering the opioid abuse and various spinal models in contemporary health care. Care paths for mechanical spine pain and the evidence for conservative chiropractic care.* Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY 2019

Bio-Neuro-Mechanical Lesions and Spine Care, Primary Spine Care, *Mechanoreceptor, proprioceptor, nociceptor innervation and control of the spinal system with central nervous system action and interaction. The integration of the pain processing network and the HPA Axis (hypothalamus, adrenal and pituitary) with the chiropractic spinal adjustment.* Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, 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.* PACE Approved for the Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2019

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.* PACE Approved for the Federation of Chiropractic Licensing Boards, 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. PACE Approved for the Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2019

Ethics, Documentation and Research, Primary Spine Care, *Maintaining ethical Interprofessional relationships based upon an evidenced based practice inclusive of triage, diagnostics and reporting. Creating thorough documentation that reflects your complete findings encompassing descriptive ICD-10 codes and concludes the presence or absence of pathology.* Academy of Chiropractic Post-Doctoral Division, Cleveland University – Kansas City, Long Island, NY 2019

Primary Spine Care - Credentials and Knowledge Base, *The credentials and knowledge based from an academia perspective when cooperatively treating in a collaborative environment inclusive of understanding pathology and mechanical spine issues.* Cleveland University - Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2019

Primary Spine Care - Spinal Biomechanical Engineering and MRI Spine Interpretation, *Integrating Spinal Biomechanical Engineering and MRI Spine Interpretation into a primary spine care model, inclusive of necessity and acquisition protocols. A comprehensive review the latest evidence in documenting mechanical issues.* Cleveland University - Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2019

Primary Spine Care - Hospital Administration, Triage, Clinical Requirements and Collaborative Relationships with Medical Specialists, *Understanding hospital and medical specialist's care paths for mechanical spine pathology and integrating the doctor of chiropractic in the hospital and allopathic treatment protocols.* Cleveland University - Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2019

Primary Spine Care - Contemporary Spine Research and Documentation, *Central nervous system connection and the thalamus, hypothalamus connection in both ascending and descending central pathways with neuro-endocrine implications that have the mechanisms to be a component of Schizophrenia, Dementia and Alzheimer's with a linear relationship to the chiropractic spinal adjustment and chronic pain.* Cleveland University - Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2019

Primary Spine Care 2: Spinal Trauma Pathology, *Morphology of healthy and traumatized connective tissue and the permanency implication of adhesions, spinal disc morphology in the healthy and pathological patient as sequella to trauma in relationship to bulges, herniations, protrusions, extrusions and sequestrations. Aberrant spinal biomechanics and negative sequella to trauma.* Cleveland University – Kansas City, Academy of Chiropractic, Setauket NY, 2019

Primary Spine Care 2: Utilizing Research in Trauma, *The ability of your electronic health records to convey tissue pathology while documenting case studies, field experiments, randomized trials and systematic literature reviews, Introducing evidence based macros in documentation to support the*

literature and necessity of care. Cleveland University – Kansas City, Academy of Chiropractic, Setauket NY, 2019

Primary Spine Care 2: Chiropractic Evidence, *Analyzing segmental pathology, adjusting vs. mobilization with cervicogenic headaches, Opioid alternatives and case management of mechanical spine pain based upon outcome studies.* Cleveland University – Kansas City, Academy of Chiropractic, Setauket NY, 2019

Primary Spine Care 2: Chiropractic Spinal Adjustment Central Nervous System Processing, *Literature reviews of mechanoreceptor, proprioceptor and nociceptor stimulation of later horn gray matter with periaqueductal stimulation affecting the thalamus and cortical regions with efferent distribution in disparate regions of the body in both pain and systemic stimulation.* Cleveland University – Kansas City, Academy of Chiropractic, Setauket NY, 2019

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 or PACE Recognized by The Federation of Chiropractic Licensing Boards], Academy of Chiropractic Post Doctoral Division, Long Island, NY, 2019

Accident Reconstruction: Causality, Bodily Injury, Negative Acceleration Forces, Crumple Zones and Critical Documentation, *Factors that cause negative acceleration to zero and the subsequent forces created for the vehicle that get translated to the occupant. Understanding critical documentation of hospitals, ambulance reports, doctors and the legal profession in reconstructing an accident..*[Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards], Academy of Chiropractic Post Doctoral Division, Long Island, NY, 2019

Accident Reconstruction: Skid Marks, Time, Distance, Velocity, Speed Formulas and Road Surfaces, *The mathematical calculations necessary utilizing time, distance, speed, coefficients of friction and acceleration in reconstructing an accident. The application of the critical documentation acquired from an accident site.* [Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards], Academy of Chiropractic Post Doctoral Division, Long Island, Long Island, NY, 2019

Accident Reconstruction: Research, Causality and Bodily Injury, *Delta V issues correlated to injury and mortality, side impact crashes and severity of injuries, event data recorder reports correlated to injury, frontal impact kinematics, crash injury metrics with many variables and inquiries related to head restraints.* [Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards], Academy of Chiropractic Post Doctoral Division, Long Island, Long Island, NY, 2019

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

evaluation, advanced imaging and electrodiagnostics. Academy of Chiropractic, Cleveland University Kansas City, Chiropractic and Health Sciences, Long Island, New York, 2019

MRI Spine Interpretation and Protocols, Contemporary acquisition protocols including slice thicknesses and sequences inclusive of the ordering process. Interpretation of axial, sagittal and coronal views in T1, T2 and stir views inclusive of the disc, spinal cord, extra-dural and intra-dural pathology. Academy of Chiropractic, Cleveland University Kansas City, Chiropractic and Health Sciences, Long Island, New York, 2019

Ethics and Medical Collaboration, Having referral relationships with emergency rooms, neurosurgeons, orthopedic surgeons, pain management specialists, neurologists, neuroradiologist and medical primary care providers based upon clinical dilemmas that processed after a thorough history, examination and imaging if clinically indicated to conclude diagnostic dilemmas. Utilizing evidence-based protocols and acquisition of images and treatment pathways, collaborating with medical specialists and primaries to conclude and accurate treatment plan. Academy of Chiropractic, Cleveland University Kansas City, Chiropractic and Health Sciences, Long Island, New York, 2019

Documentation in Medical – Legal and Insurances, Constructing and concluding an E&M (99202-99205) report that accurately reflects the history, clinical findings and management of trauma cases that concurrently meets the needs of both the carriers in the courts and ethical relationship that concurrently matches the standards of both contemporary academia requirements and a contemporary literature-based standard. Academy of Chiropractic, Cleveland University Kansas City, Chiropractic and Health Sciences, Long Island, New York, 2019

Primary Spine Care 2: Spinal Trauma Pathology, Morphology of healthy and traumatized connective tissue and the permanency implication of adhesions, spinal disc morphology in the healthy and pathological patient as sequella to trauma in relationship to bulges, herniations, protrusions, extrusions and sequestrations. Aberrant spinal biomechanics and negative sequella to trauma. Cleveland University – Kansas City, Academy of Chiropractic, Setauket NY, 2019

Primary Spine Care 2: Utilizing Research in Trauma, The ability of your electronic health records to convey tissue pathology while documenting case studies, field experiments, randomized trials and systematic literature reviews, Introducing evidence based macros in documentation to support the literature and necessity of care. Cleveland University – Kansas City, Academy of Chiropractic, Setauket NY, 2019

Primary Spine Care 2: Chiropractic Evidence, Analysing segmental pathology, adjusting vs. mobilization with cervicogenic headaches, Opioid alternatives and case management of mechanical spine pain based upon outcome studies. Cleveland University – Kansas City, Academy of Chiropractic, Setauket NY, 2019

Primary Spine Care 2: Chiropractic Spinal Adjustment Central Nervous System Processing, *Literature reviews of mechanoreceptor, proprioceptor and nociceptor stimulation of later horn gray matter with periaqueductal stimulation affecting the thalamus and cortical regions with efferent distribution in disparate regions of the body in both pain and systemic stimulation.* Cleveland University – Kansas City, Academy of Chiropractic, Setauket NY, 2019

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 or 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, 2019

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 or 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, 2019

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 or 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, 2019

Orthopedic Testing: Clinical Grand Rounds, *Integration of orthopedic testing in the clinical setting utilizing both simple and complex patient scenarios. It includes potential stroke, or vertebrobasilar insufficient patients and understanding the nuances in a clinical evaluation with orthopedic testing as a critical part of the evaluation and screening process. How to integrate orthopedic testing in the clinical setting utilizing both simple and complex patient scenarios. It includes potential stroke, or vertebrobasilar insufficient patients and understanding the nuances in a clinical evaluation with orthopedic testing as a critical part of the evaluation and screening process.* [Texas Chiropractic College or 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, 2019

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 or 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, 2019

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 in stroke inclusive of diabetes, coagulopathy, acquired and hereditary deficiencies.* [Texas Chiropractic College or 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, 2019

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 or 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, 2019

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 or 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, 2019

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, 2018

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, 2018

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, 2018

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, 2018

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, 2018

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, 2018

Connective Tissue Pathology, Spinal Biomechanics as Sequela to Trauma, MRI Spine Interpretation, Ordering Protocols & Triaging the Injured, *The latest research on the 6 ways to age-date disc herniations and bulges from trauma inclusive of disc pathology nomenclature. MRI ordering protocols, inclusive of Dixon format and fat-suppressed images. The neurology and pathology of connective tissue and the sequela of trauma at the biomechanical level leading to bio-neuro-mechanical failure. Contemporary evidenced-based building blocks for triaging and in a collaborative environment.* Cleveland University

Kansas City, Chiropractic and Health Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island NY, 2018

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

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

Documentation, Collaboration, and Primary Spine Care, *An academic basis for documentation that is usual and customary across professions in collaborative care. Maintaining ethical medical-legal relationships based upon Voir Dire and Duabert standards with ensuring a comprehensive and 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

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

Spinal Biomechanical Engineering Pathology and Clinical Application, *Integrating pathological function based upon the Cartesian system and digital mensuration in developing treatment plans with diagnosed connective tissue failures. Diagnosing corrective vs. clinical management scenarios when considering maximum medical improvement in both the chronic and acute, insidious and traumatically induced*

patient. PACE Approved for the Federation of Chiropractic Licensing Board, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2018

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

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

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

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

Cervical Flexion Distraction Spine Manipulation Using Cox Protocol, Certification in Assessment & Management, Biomechanics of the cervical and thoracic spine, evidence based assessment and diagnosis, chemical and mechanical pain generation, discogenic pain diagnosis and treatment, concussion brain with cervical assessment and management, radicular symptom diagnosis and treatment, role of dorsal root ganglion in radicular symptoms, components of disc degeneration, spinal stenosis, facet syndrome, spondylolisthesis, cervicothoracic spine treatment, and clinical outcome studies of spine pain. National University of Health Sciences & F/D Enterprise LLC, Ft. Wayne, IN, 2017

Spinal Biomechanics in Trauma, To utilize whiplash associated disorders in various vectors of impact and whiplash mechanisms in determining pathobiomechanics. To clinically correlate annular tears, disc herniations, fractures, ligament pathology and spinal segmental instability as sequellae 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. ACCME Joint

Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2015

Spinal Biomechanical Engineering: Full Spine Digital Analysis, *Digitalizing and analyzing the full spine images to diagnose pathobiomechanics as sequellae to trauma in relation to ligamentous failure and disc and vertebral pathology as sequellae. 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.* ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2015

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.* ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2015

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.* ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2015

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.* ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral

Division, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2015

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.* ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2015

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.* ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2015

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.* ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2015

Medical-Legal-Insurance Documentation, *Accurate and compliant documentation of history and clinical findings inclusive of functional losses, loss of activities of daily living, duties under duress and permanent loss of enjoyment of life. Prognosing static vs. stable care, gaps in care both in the onset and in the middle of passive care with a focus on detailed diagnosing. The integration of clinical academia, the court system and the insurance reimbursers' requirements for complete documentation.* Academy of Chiropractic Post-Doctoral Division, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Long Island, NY, 2014

Impairment Rating Certification, *The understanding and utilization of the protocols and parameters of the AMA Guide to the Evaluation of Permanent Impairment 6th Edition. Spine, neurological sequelae, migraine, sexual dysfunction, sleep and arousal disorders, station and gait disorders and consciousness are detailed for impairment rating. Herniated discs, radiculopathy, fracture, dislocations and functional loss are also detailed in relation to impairment ratings.* Academy of Chiropractic Post Doctoral Division,

Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Long Island, NY, 2014

Lumbar Flexion Distraction Spine Manipulation Using Cox Protocol, Certification in Assessment & Management, *Biomechanics of the lumbar spine, evidence based assessment and diagnosis, chemical and mechanical pain generation, discogenic pain diagnosis and treatment, radicular symptom diagnosis and treatment, role of dorsal root ganglion in radicular symptoms, components of disc degeneration, spinal stenosis, facet syndrome, spondylolisthesis, lumbar spine treatment, and clinical outcome studies of spine pain.* National University of Health Sciences & F/D Enterprise LLC, San Francisco, CA, 2012

MRI Interpretation of Degenerative Spine and Disc Disease with Overlapping Traumatic Insult to Both Spine and Disc, *MRI slices, views, T1, T2, STIR Axial, FFE, FSE and sagittal images in the interpretation of degenerative spondylolisthesis, spinal canal stenosis, Modic type 3 changes, central herniations, extrusions, compressions, nerve root compressions, advanced spurring and thecal sac involvement from an orthopedic, emergency room, chiropractic, neurological, neurosurgical, physical medicine perspective.* ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Long Island, NY, 2012

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 comorbidities and complications of stenosis, pseudo-protrusions, cantilevered vertebrate, Schmorl's nodes and herniations. morphology of lumbar disc pathologies of central and lateral herniations, protrusions, extrusions, sequestration, focal and broad based herniations are defined and illustrated. Spinal cord and canal compromise interpretation with management.* ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Long Island, NY, 2012

MRI Interpretation of Cervical Degeneration/Bulges, *MRI slices, views, T1, T2, STIR axial, stacking, FFE, FSE and sagittal images in the interpretation of lumbar degeneration. With the co-morbidities and complications of stenosis, pseudo-protrusions, cantilevered vertebrate, Schmorl's nodes and herniations. Spinal cord and canal compromise interpretation with management.* ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Long Island, NY, 2012

MRI Interpretation of Lumbar Herniations, *MRI slices, views, T1, T2, STIR axial, stacking, FFE, FSE and sagittal images in the interpretation of lumbar herniations. With the co-morbidities and complications of stenosis, pseudo-protrusions, cantilevered vertebrate, Schmorl's nodes and herniations. Morphology of lumbar disc pathologies of central and lateral herniations, protrusions, extrusions, sequestration, focal and broad based herniations are defined and illustrated. Central canal and cauda equina compromise interpretation with management.* ACCME Joint Sponsorship with the State University of New York at

Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Long Island, NY, 2012

MRI Interpretation of Cervical Herniations, *MRI slices, views, T1, T2, STIR Axial, FFE, FSE and sagittal images in the interpretation of lumbar herniations. With the co-morbidities and complications of stenosis, pseudo-protrusions, cantilevered vertebrate, Schmorl's nodes and herniations. morphology of lumbar disc pathologies of central and lateral herniations, protrusions, extrusions, sequestration, focal and broad based herniations are defined and illustrated. Spinal cord and canal compromise interpretation with management.* ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Long Island, NY, 2012

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 sequellae, including bulge, herniation, protrusion, extrusion and sequestration.* ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Long Island, NY, 2012

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.* CMCS Post Doctoral Division, New York Chiropractic Council, New York State Department of Education, Board for Chiropractic, Long Island, NY, 2011

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 sequellae.* New York Chiropractic Council, New York State Department of Education, Board for Chiropractic, AACME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences and CMCS Post Doctoral Division, Buffalo, NY, 2009

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, New York State Department of Education, Board for Chiropractic, AACME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences and CMCS Post Doctoral Division, Buffalo, NY, 2009

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. New York Chiropractic Council, New York State Department of Education, Board for Chiropractic, AACME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences and CMCS Post Doctoral Division, Buffalo, NY, 2009

MRI Disc Pathology and Spinal Stenosis, MRI interpretation of bulged, herniated, protruded, extruded sequestered and fragmented disc pathologies in etiology and neurological sequellae in relationship to the spinal cord and spinal nerve roots. New York Chiropractic Council, New York State Department of Education, Board for Chiropractic, AACME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences and CMCS Post Doctoral Division, Buffalo, NY, 2009

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. New York Chiropractic Council, New York State Department of Education, Board for Chiropractic, AACME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences and CMCS Post Doctoral Division, Buffalo, NY, 2009

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. New York Chiropractic Council, New York State Department of Education, Board for Chiropractic, AACME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences and CMCS Post Doctoral Division, Buffalo, NY, 2009

Management Principles in Personal Injury: Auto Crash Reconstruction, Advanced Diagnostics and Treatment, An ACR (auto crash reconstruction) primer covering the purpose of ACR, methodology benefits and limitations. Clinically correlating history, physical exam methods, radiographic and advanced imaging including MRI, CT, SPECT, electrodiagnostic testing and other tests to personal injury. Included a review of literature support of the various therapeutic procedures and approaches for successful treatment plan management of bodily injury and mild traumatic brain injury. Spine Research Institute of San Diego, San Francisco, CA, 2009

Medicolegal Issues: Fundamentals for Practitioners, Discussion of report writing fundamentals, record keeping, use of medical photography. A study of the role of and preparing for depositions, arbitrations, court testimony, and use of evidence along with federal rules of evidence, as these matters pertain to health care providers. Spine Research Institute of San Diego, Dallas, TX, 2009

Principles of Impairment Rating and Forensic Reporting, Disability and impairment issues, daily documentation, stage specific examination, disability questionnaires, AMA Impairment Guidelines 1-6th editions, DRE (diagnosis-related estimate) impairment, ROM (range of motion) impairment, AOMSI,

accurate report writing of bodily injuries, narrative documentation. Spine Research Institute of San Diego, St. Louis, MO, 2009

Whiplash and Brain Injury Trauma: The Fundamental Science, An in depth study of the literature covering CAD (cervical acceleration/deceleration) injuries, including spine biomechanics as it relates to injury, occupant kinematics and injury risk factors, risk factors regarding recovery, injury grading systems, mechanisms of injury, epidemiology of CAD and common injuries. Spine Research Institute of San Diego, San Francisco, CA, 2009

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-Electroretinography (V-ENG) interpretation, protocols and clinical indications for the trauma patient. CMCS Post Doctoral Division, New York Chiropractic Council, New York State Education Department, Board for Chiropractic, Long Island, NY, 2009

MRI, Bone Scan & 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. CMCS Post Doctoral Division, New York Chiropractic Council, New York State Education Department Board for Chiropractic, Long Island, NY, 2009

Crash Dynamics & Its Relationship to Causality, An extensive understanding of the physics involved in the transference of energy from the bullet car to the target car. This includes G's of force, Newtons, gravity, energy, skid marks, crumple zones, spring factors, event data recorder and the graphing of the movement of the vehicle before, during and after the crash. Determining the clinical correlation of forces and bodily injury. CMCS Post Doctoral Division, New York Chiropractic Council, New York State Education Department Board for Chiropractic, Long Island, NY, 2009

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. CMCS Post Doctoral Division, New York Chiropractic Council, New York State Education Department Board for Chiropractic, Long Island, NY, 2009

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. CMCS Post Doctoral Division, New York Chiropractic Council, New York State Department of Education Board for Chiropractic, Long Island, NY, 2009

Biomechanics of Low-Speed Impacts: Injury Mechanisms, *Discussion of impact forces in motor vehicle collision and bodily injury. Review of spinal anatomy, biomechanics of injury, injury variability, restraint and seat influences, occupant factors, structures injured in whiplash, healing, pain from whiplash associated disorders, diagnosing, and prognosis of whiplash associated disorders.* University of California Extension Course, Minneapolis, MN, 2007

Pain Management & Functional Training for the Upper & Lower Quarters, *Covers musculoskeletal rehabilitation principles, lower limb biomechanics, and electrodiagnosis of radiculopathies & plexopathies, and pain classifications.* Southern California University of Health Sciences, Chicago, IL, 2003

Evidenced Based Care & Critical Appraisal of the Literature, *The focus of the course is on levels of clinical evidence, the appropriate use of research and limitations of basic study designs found in clinical research. Discusses steps how clinicians can perform data collection for research and how to integrate evidence into private practice.* Southern California University of Health Sciences, Chicago, IL, 2003

Rehabilitation of Common Athletic Injuries, *Review of mechanisms of injury, treatment objectives, phases of soft tissue repair, factors that slow repair, factors from incomplete repair, and principles of management.* Southern California University of Health Sciences Postgraduate, Chicago, IL, 2002

Orthopedic Manipulative Therapy & Proprioceptive Neuromuscular Facilitation Therapy for the Lumbar Spine, Hip, Pelvis, Knee, Ankle, Foot, *Discusses principles, procedures of subjective examination and physical examination. Reviews the symptoms of soft tissue changes and assessment of functional deficits.* Southern California University of Health Sciences, Chicago, IL, 2002

Headache: Diagnosis & Conservative Management, *Topics include history and types of headaches, treatment of tension headaches, treatment of migraine headaches, and self-management of headaches.* Northwestern Health Sciences University, Bloomington, MN, 2002

The Chiropractic Active Care Specialist, *Instruction on integrating rehabilitation into chiropractic practice, progression of rehabilitation, and scoring treatment outcomes.* Southern California University of Health Sciences, Chicago, IL, 2001

McKenzie Cervical Spine Protocols, *Explains the McKenzie approach, the history and the clinical exam for the diagnosis. Review of the contraindications to treatment and prophylaxis of the cervical and thoracic spine.* Southern California University of Health Sciences, Chicago, IL, 2001

Rehabilitation of the Cervico-Thoracic Spine, *Discusses how to integrate advice and exercise with spinal manipulation, how to identify patterns of dysfunction, how to troubleshoot non-responsive patients and what principles to use in exercise for patient compliance with home care.* Southern California University of Health Sciences, Chicago, IL, 2001

Management of Orofacial Pain, TMJ Disorders & MTBI, *Instruction on anatomy, neurophysiology and clinical implications for orofacial disorders, orofacial dysfunction and common pain syndromes. Reviews the MTBI screening protocols and medical co-management.* Southern California University of Health Sciences, Chicago, IL, 2001

Whiplash and Spinal Trauma, *Focus on principles of pain gating, thalamic integration of pain, disc innervations, disc pain, disc mechanoreception and facet pain. Reviews literature on altered pain thresholds, pain receptive field enlargement, neuroplasticity, neurological wind-up and descending inhibition of nociception.* Northwestern Health Sciences University, Bloomington, MN, 2001

Rehabilitation of the Upper Quarter, *Studies the functional pathology of the shoulder, assessment of muscle imbalances, postural analysis and muscle length assessment. Focuses on the evaluation of movement patterns, proprioceptive shoulder taping, common conditions and functional correlates, and functional assessment and treatment.* Northwestern Health Sciences University, Bloomington, MN, 2000

Functional Perspective on the Lower Limb Kinetic Chain, *Topics include evaluation orthopedic exam, evaluation of gait cycle, determinants of gait, concepts of pathomechanics and foot/ankle injury. Reviews current literature of rehab techniques, sensory motor stimulation and training gait.* Northwestern Health Sciences University, Bloomington, MN, 2000

Rehabilitation of the Lumbar Spine, *Covers structural pathology & diagnosis. Reviews literature evidence of effectiveness of active care re-activating the patient. Discusses how to improve joint stability with progressive exercise, sports medicine/functional approach to care, outcome measurement, and exercise selection.* Northwestern Health Sciences University, Bloomington, MN, 2000