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Selected Occupational History

Fellowship of Spinal Biomechanics and Trauma, Candidate

Academy of Chiropractic – Active Trauma Team Member, 2018-present

Clinic Director, Corrective Chiropractic, Raleigh, NC, 2006-present

Chiropractor, Hammer Chiropractic Center, Rocky Mount, NC, 1997-2006

Education and Licensure

Doctor of Chiropractic, Licensed in the State of North Carolina, License #2427, 1997-present

Doctor of Chiropractic, Licensed in the State of Minnesota, License #3471, 1997-1998

National Board of Chiropractic Examiners, Part I, 1996

National Board of Chiropractic Examiners, Part II, 1996

National Board of Chiropractic Examiners, Part III, 1996

National Board of Chiropractic Examiners, Physiotherapy, 1996

Doctor of Chiropractic, Northwestern College of Chiropractic, Bloomington, MN, 1996

Bachelor of Science in Human Biology, Northwestern College of Chiropractic, Bloomington, MN, 1996

Pre-Chiropractic Studies, Normandale Community College, Bloomington, MN, 1992-1993

Pre-Chiropractic Studies, University of Minnesota, Minneapolis/St. Paul, MN, 1987-1989, 1991-1992

Selected Post-Graduate Education

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

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

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

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

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

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

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

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

Course Title: Occipital Lift, cervical, and lumbar spine adjusting: included occipital, cervical, and lumbar spine biomechanical movement pattern and how to detect and safely adjust the underlying pathology. Sherman Chiropractic College: Atlanta, GA, 2023

Mild Traumatic Brain Injury/Traumatic Brain Injury/Concussion, *differentially diagnosing mild traumatic brain injury vs. traumatic brain injury and the clinical and imaging protocols required to conclude an accurate diagnosis for head trauma.* Cleveland University – Kansas City, Academy of Chiropractic Post-Doctorial Division, Long Island, NY, 2018

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.* Cleveland University – Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2018

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.* Cleveland University – Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2018

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.* Cleveland University – Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2018

Accident Reconstruction: Research, Causality and Bodily Injury*, Delta V issues correlated to injury and mortality, side impact crashes and severity of injuries, event data recorder reports correlated to injury, frontal impact kinematics, crash injury metrics with many variables and*

inquiries related to head restraints. Cleveland University – Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2018

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.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

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.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

MRI Disc Pathology and Spinal Stenosis, *MRI interpretation of bulged, herniated, protruded, extruded, sequestered and fragmented disc pathologies in etiology and neurological sequelae in relationship to the spinal cord and spinal nerve roots.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

MRI Spinal Pathology, *MRI interpretation of bone, intradural, extradural, cord and neural sleeve lesions. Tuberculosis, drop lesions, metastasis, ependymoma, schwanoma and numerous other spinal related tumors and lesions.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

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.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018.

MRI Clinical Application, *The clinical application of the results of space occupying lesions. Disc and tumor pathologies and the clinical indications of manual and adjustive therapies in the patient with spinal nerve root and spinal cord insult as sequelae.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

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. Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

MRI Interpretation of Lumbar Degeneration/Bulges, *MRI slices, views, T1, T2, STIR axial, stacking, FFE, FSE and sagittal images in the interpretation of lumbar degeneration. With the co-morbidities and complications of stenosis, pseudo-protrusions, cantilevered vertebrate, Schmorl's nodes and herniations. Central canal and cauda equina compromise interpretation with management.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

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.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

MRI Interpretation of Cervical Degeneration/Bulges, *MRI slices, views, T1, T2, STIR axial, stacking, FFE, FSE and sagittal images in the interpretation of cervical degeneration. With the co-morbidities and complications of stenosis, pseudo-protrusions, cantilevered vertebrate, Schmorl's nodes and herniations. Spinal cord and canal compromise interpretation with management.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

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.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

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. Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

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

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

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

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

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

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

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

Medical-Legal-Insurance Documentation, *Accurate and compliant documentation of history and clinical findings inclusive of functional losses, loss of activities of daily living, duties under duress and permanent loss of enjoyment of life. Prognosing static vs. stable care, gaps in care both in the onset and in the middle of passive care with a focus on detailed diagnosing. The integration of chiropractic academia, the court system and the insurance reimbursor's requirements for complete documentation.* Cleveland University – Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2018

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.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

Spinal 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.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

Spinal 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. Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

Spinal Biomechanics 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 sequalae 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.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

Spinal 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.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

Spinal 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.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

Spinal 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.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

Spinal Biomechanical Engineering: Full Spine Digital Analysis, *Digitalizing and analyzing the full spine images to diagnose pathobiomechanics as sequalae to trauma in relation to ligamentous failure and disc and vertebral pathology as sequalae. 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. Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

Spinal 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.* 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, 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.* 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, 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 grey matter, thalamus and cortices involvement.* 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, 2018

Spinal Trauma Pathology, Biomechanics of Traumatic Disc Bulge and Age Dating Herniated Disc Pathology, *The biomechanics of traumatic disc bulges as sequelae from trauma and the comorbidity of ligamentous pathology. Age-dating spinal disc pathology in accordance with Wolff's Law.* 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, 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.* 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, 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.* 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, 2018

Documentation and Compliance, A review of proper documentation and requirements to get the best patient results, *documentation to effectively support the necessity for clinically indicated care. The role of timely evaluations and re-evaluations in coordinating care inclusive of history, physical and evaluation report and concludes with the correlation of the SOAP note.* Kevin Sharpe, 2017

Shoulder Treatment and Diagnosis, An extensive look at the anatomy, etiology, diagnosis and treatment of shoulder joint problems. How to coordinate care with orthopedic and the medical field for shoulder injuries. Raleigh, NC, 2017

Temporomandibular Joint Dysfunction, An extensive look at the anatomy, etiology, diagnosis and treatment of temporomandibular joint problems. How to coordinate care with dentists, orthodontist and the medical field in general. March 4-5, 2016 Chicago, Illinois.

Documentation and Evidence in a Medical-Legal Practice, *The role of scientific research conclusions with contemporary documentation to effectively support the necessity for clinically indicated care. The role of timely evaluations and re-evaluations in coordinating care inclusive of history, physical and evaluation report and concludes with the correlation of the SOAP note and HCFA that correlates the conclusion of the evolutionary findings. Coordinating research and clinical findings with primary care providers and medical specialists in the rehabilitation process inclusive of insurance requirements and contemporary MRI research nomenclature.* Academy of Chiropractic Post-Doctoral Division, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Boca Raton, FL, 2015

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, dislocation and functional loss are also detailed in relation to impairment ratings. *Academy of Chiropractic Post Doctoral Division, Long Island, NY, 2012 Chiropractic Documentation, Billing and Coding, Review of documentation, proper billing and coding.* Texas Chiropractic College, Pasadena, TX, 2013

Ethics, Boundaries, and North Carolina Jurisprudence, *Review of ethics, boundaries and North Carolina jurisprudence.* Texas Chiropractic College, Pasadena, TX, 2013

Documentation and Triage in Trauma**,** ICD-9 and CPT requirements in coding for the traumatically injured including integrating electronic health records including informed consent, evaluation and management, testing orders. The utilization of research in medical reports for both the trauma and non-trauma patients. Clinical coordination of care and reporting to healthcare and legal providers, Federation of Chiropractic Licensure Boards, Academy of Chiropractic**,** American Academy of Medical-Legal Professionals, Hollywood, Florida, 2012

Medical-Legal Research and the Documentation of Causal Relationship, Prognosis and Treatment of the Traumatically Injured, Review of current research published in peer reviewed medically indexed journals focusing on traumatic injuries and how current literature affects the diagnostic conclusion and how to formulate treatment plans. Federation of Chiropractic Licensure Boards, Academy of Chiropractic, American Academy of Medical-Legal Professionals, Hollywood, Florida, 2012

Biomechanics of Spinal Trauma and its Relationship to Pre-Existing Injuries and Degenerative Changes. Whiplash Associated Disorders and the biomechanics of side impact vs. rear impact with emphasis on traumatic forces and body position, the mechanism of whiplash injury phases with their relationships to physiologic tolerance to trauma, specific diagnosis of disc pathology and annular tear, disc herniation, fracture, ligamentous injury and instability. Details of spinal nerve root stretching injury and dimensions of the spinal canal during whiplash was outlined particular to significant spinal injury resulting from low level accelerations including pediatric spinal trauma and physiological normals. Spinal surgical intervention techniques including ordering diagnostic studies using MRI, CT and digital motion x-ray. Federation of Chiropractic Licensure Boards, Academy of Chiropractic, American Academy of Medical-Legal Professionals, Hollywood, Florida, 2012

MRI Spine Interpretation of Disc Bulge and Herniation, Spinal MRI findings related to degenerative changes vs. traumatic changes of the intervertebral disc by using definitions provided by the American Society of Neuroradiology. Anatomy of the intervertebral disc, spinal cord, nerve roots and spinal ligaments correlated to T1, T2, STIR sagittal, stacking and axial images. Anatomical MRI differentiation of normal, degenerative and traumatic changes, Federation of Chiropractic Licensure Boards, Academy of Chiropractic, American Academy of Medical-Legal Professionals, Hollywood, Florida, 2012

Electrodiagnostics Interpretation, EMG/NCV, Somato-sensory evoked potentials, brain stem auditory evoked potential and visual evoked potential utilization, physiology and interpretation, electrodiagnostic testing as a clinical component in part of the neurological work-up of the traumatically injured patient in both the peripheral and central nervous system. Inductions and contraindications to electrodiagnostic procedures. The utilization of electrodiagnostics in concluding radiculopathy, myelopathy and plexopathy and determining recent trauma or chronic pathology, Federation of Chiropractic Licensure Boards, Academy of Chiropractic**,** American Academy of Medical-Legal Professionals, Hollywood, Florida, 2012

Admissibility Standards of the Medical Expert in Trauma, Documentation requirements of the courts in a medical-legal case including causality, bodily injury and persistent functional losses, ethically reporting of functional loss as it pertains to the integrity of the joint and activities of daily living and implications of chronicity, reporting of normal findings, maximum medical improvement and the release of the patient in the medical-legal arena, Federation of Chiropractic Licensure Boards, Academy of Chiropractic**,** American Academy of Medical-Legal Professionals, Hollywood, Florida , 2012

Neurodiagnostics, Imaging Protocols and Pathology of the Trauma Patient, *An in-depth understanding of the protocols in triaging and reporting the clinical findings of the trauma patient. Maintaining ethical relationships with the medical-legal community*. CMCS Post Doctoral Division, New York Chiropractic Council, New York State Department of Education 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

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

MRI, Bone Scan and X-Ray Protocols, Physiology and Indications for the Trauma Patient, *MRI interpretation, physiology, history and clinical indications, bone scan interpretation, physiology and clinical indications, x-ray clinical indications for the trauma patient.* CMCS Post Doctoral Division, New York Chiropractic Council, New York State Education Department Board for Chiropractic, Long Island, NY, 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-Electronystagmosgraphy (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

Documentation and Reporting for the Trauma Victim*, Understanding the necessity for accurate documentation and diagnosis utilizing the ICD-9 and the CPT to accurately describe the injury through diagnosis. Understanding and utilizing state regulations on reimbursement*

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

Documenting Clinically Correlated Bodily Injury to Causality, *Understanding the necessity for accurate documentation, diagnosis and clinical correlation to the injury when reporting injuries in the medical-legal community. Documenting the kinesiopathology, myopathology, and neuropathology, pathophysiology in both a functional and structural paradigm.* CMCS Post Doctoral Division, New York Chiropractic Council, New York State Education Department, Board for Chiropractic, Long Island, NY, 2009

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.* CMCS Post Doctoral Division, New York Chiropractic Council, New York State Department of Education, Board for Chiropractic, Long Island, New York, 2010

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.* CMCS Post Doctoral Division, New York Chiropractic Council, New York State Department of Education, Board for Chiropractic, Magdy Shady MD, Neurosurgeon, State University of New York at Stony Brook, Long Island, New York, 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.* CMCS Post Doctoral Division, New York Chiropractic Council, New York State Department of Education, Board for Chiropractic, Robert Peyster MD, Neuroradiologist, State University of New York at Stony Brook, Long Island, New York, 2009

MRI Spinal Pathology, MRI *interpretation of bone, intradural, extradural, cord, and neural sleeve lesions. Tuberculosis, drop lesions, metastasis, epedymoma, schwannoma, and numerous other spinal related tumors and lesions.* CMCS Post Doctoral Division, New York Chiropractic Council, New York State Department of Education, Board for Chiropractic, Robert Peyster MD, Neuroradiologist, State University of New York at Stony Brook, Long Island, New York, 2009

MRI Disc Pathology & Spinal Stenosis, MRI *interpretation of bulged, herniated, protruded, extruded sequestered and fragmented disc pathologies in etiology and neurological sequelae in relationship to the spinal cord and spinal nerve roots.* CMCS Post Doctoral Division, New York Chiropractic Council, New York State Department of Education, Board for Chiropractic, Robert Peyster MD, Neuroradiologist, State University of New York at Stony Brook, Long Island, New York, 2009

MRI Anatomy & History, Normal *anatomy of axial and sagittal views utilizing T1, T2, 3D Gradient and STIR sequences of imaging. Standardized and desired protocols in views and sequencing of MRI examination to create an accurate diagnosis in MRI.* CMCS Post Doctoral Division, New York Chiropractic Council, New York State Department of Education, Board for Chiropractic, Robert Peyster MD, Neuroradiologist, State University of New York at Stony Brook, Long Island, New York, 2009

MRI Physics and History, Magnetic *fields, T1 and T2 relaxations, nuclear spins, phase encoding, spin echo, T1 and T2 contrast, magnetic properties of metals and the historical perspective of the creation of NMR and MRI.* CMCS Post Doctoral Division, New York Chiropractic Council, New York State Department of Education, Board of Chiropractic, Terry Button, PhD, Medical Physicist, State University of New York at Stony Brook, Long Island, New York, 2009

Low Impact Auto Accidents, *Review of low impact auto accidents biomechanics and research studies on injuries from such accidents.* North Carolina Board of Chiropractic Education, Charlotte, NC, 2009

Chiropractic Documentation, Billing and Coding, *Review of documentation, proper billing and coding.* Chiropractic Network of the Carolinas, Greensboro, NC, 2009

Ethics, Boundaries, and North Carolina Jurisprudence, *Review of ethics, boundaries and North Carolina jurisprudence.* Texas Chiropractic College, Pasadena, TX, 2009

Pediatric and Fetal Development, *Review of the development of the fetus and infant as well related problems and chiropractic treatments.* North Carolina Chiropractic Association, Raleigh, NC, 2008

Chiropractic Treatment of Golf Injuries, *Review of normal golf swing, common swing errors, related injuries and chiropractic treatments of these injuries.* Texas Chiropractic College, Pasadena, TX, 2008

Chiropractic Treatment of Auto Accident Injuries*, A breakdown of the injuries sustained in auto accident from an anatomical, orthopedic, neurological, chiropractic, treatment and expected outcome stand point.* Texas Chiropractic College, Pasadena, TX, 2007

Foot and Ankle Symposium, *Chiropractic evaluation and treatment of foot and ankle injuries.* North Carolina Chiropractic Association, Raleigh, NC, 2007

Validating Chiropractic, *Up to date research regarding chiropractic treatment and outcomes for various conditions.* North Carolina Chiropractic Association, Raleigh, NC, 2006

Exercise and Strength Rehabilitation, *Review of normal muscle anatomy, types of training and benefits gained from various types of training.* North Carolina Chiropractic Association, Pasadena, TX, 2006

MRI Evaluation, *An in-depth look at MRI of the spine and diagnostic value to the chiropractor.* North Carolina Chiropractic Association, Charlotte, NC, 2005

Rehabilitation of the Spine, *Review of different types of in office and home exercise protocols for spinal and extremity injuries.* North Carolina Chiropractic Association, Raleigh NC, 2005

Selected Honors & Awards

Dean's List, Normandale Community College, 1993

Selected Memberships

International Chiropractic Association, 2018-Present

North Carolina Chiropractic Association, Member, 2009-2015

World Chiropractic Association, Member, 2006-2009

Selected Community Service

Raleigh Rugby Football Club Board Member, Raleigh NC, 2014- 2019

Raleigh Rugby Football Club, Team Chiropractor, Raleigh, NC, 2000- Present

Educational Coordinator BNI, Raleigh 2015

Vice President of BNI, Wake Forest, NC, 2014

Chamber of Commerce, Member, Raleigh, NC, 2008-2009

Tar River Kiwanis, Member, Rocky Mount, NC, 1997-2002

Red Cross, Volunteer CPR Instructor, Rocky Mount, NC, 1997-2000

Rocky Mount Jaycees, Member, Rocky Mount, NC, 1997-1999