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EDUCATION AND LICENSURE

Doctor of Chiropractic, Licensed in the State of Virginia, License # 0104000997,1991-Present

Doctor of Chiropractic, Licensed in the State of New Jersey, License # 38MC00273600,1984-Present

Doctor of Chiropractic, Licensed in the State of Illinois, License # 038004441,1981-1984

Doctor of Chiropractic, Licensed in the State of Missouri, License # 4654,1981-1984

Doctorate of Chiropractic, Logan College of Chiropractic, St. Louis, Missouri, 1981

Internship, Ferguson Chiropractic Clinic, Ferguson, Missouri, Missouri, 1980 -1981

National Board of Chiropractic Examiners, Part 1,1983

National Board of Chiropractic Examiners, Part II, 1983

SELECTED POST-GRADUATE EDUCATION, CERTIFICATIONS AND DIPLOMATES

Diplomat, American Academy of Medical Legal Professionals, New Jersey, 2013 Diplomate, American Board of Quality Assurance & Utilization Review Physicians: Health Care Quality and Management, 1998-present

Understanding the Values and Ethics of Interprofessional Collaboration, *Developing ethical Interprofessional relationships in a patient centered paradigm to ensure better outcomes while considering cultural and personal diversity needs of patients*, Accreditation Council on Continuing Medical Education (ACCME) in cooperation with Medscape, 2016

Blood Biomarkers Useful for Concussion Diagnosis, *The utilization of GFAP and UCH-L1 in determining, traumatic brain injury, mild traumatic brain injury and mild-moderate traumatic brain injury as a triage tool to manage head trauma patients* Accreditation Council on Continuing Medical Education in cooperation with Medscape, 2016

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

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

Chiropractic College, Academy of Chiropractic, Academy of Chiropractic, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Melville NY, 2016

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

Spinal Trauma Pathology, Triage and Connective Tissue Injuries and Wound Repair, *Triaging the injured and differentially diagnosing both the primary and secondary complaints. Connective tissue injuries and wound repair morphology focusing on the aberrant tissue replacement and permanency prognosis potential*. Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2016

Spinal Trauma Pathology: Ligament Anatomy and Injury Research and Spinal Kinematics, *Spinal ligamentous anatomy and research focusing on wound repair, future negative sequelae of abnormal tissue replacement and the resultant aberrant kinematics and spinal biomechanics of the spine*. Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2016

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

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

Spinal Trauma Pathology: Clinical Grand Rounds, *The review of case histories of mechanical spine pathology and biomechanical failures inclusive of case histories, clinical findings and x-ray and advanced imaging studies. Assessing comorbidities in the triage and prognosis of the injured*. Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2016

Spinal Trauma Pathology: Research Perspectives, *The review of current literature standards in spinal trauma pathology and documentation review of biomechanical failure, ligamentous failure and age-dating disc pathology*. Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2016

MRI Spine Interpretation and Spinal Biomechanical Engineering-Primary Spine Care, *Correlating spinal biomechanics secondary to trauma and MRI findings inclusive of herniation, bulging, protruded and extruded*

discs. Correlating co-efficient of forces translated form the bullet vehicle to the target vehicle to the occupant in determining causality of bodily injury, Academy of Chiropractic, PACE approved for the Federation of Chiropractic Licensing boards, Texas Chiropractic College, Las Vegas NV, 2015

Chiropractic as Primary spine care based upon the literature conclusions and the documentation requirements to support those conclusions in an ethical collaborative environment inclusive of hospitals, emergency rooms, primary care medical doctors and medical specialists. Academy of Chiropractic, PACE approved for the Federation of Chiropractic Licensing boards, Texas Chiropractic College, Las Vegas NV, 2015

Contemporary Literature Review of the Chiropractic Adjusting Mechanisms- Primary Spine Care , *The latest scientific evidence of the effects of the chiropractic spinal adjustment on the central nervous system, both upper and lower motor neurons. A comparative analysis of chiropractic vs. other modalities and therapies* , Academy of Chiropractic, PACE approved for the Federation of Chiropractic Licensing boards, Texas Chiropractic College, Las Vegas NV, 2015

Primary Spine Care, *Neurophysiological central and peripheral nervous systems mechanisms of pain with integrated higher cortical functions of the thalamus, cingulate, amygdala, pre-frontal, motor and sensory cortexes. Trauma and chronic pain care effecting mechanoreceptors, nociceptors and proprioceptors through adjustive therapy based upon evidenced based care and current literature verification*, Texas Chiropractic College, Federation of Chiropractic Licensing Boards, New York State Department of Education Board for Chiropractic, Academy of Chiropractic, Islandia NY 2015

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

US Department of Transportation Certified Medical Examiner: Federal Guidelines and Regulations from the US Department of Transportation, Federal Motor Carrier Safety Administration for commercial drivers. National Registration # 9332240715 Certification in 2013 National Registry of Certified Medical Examiners, New York Chiropractic College & Association of New Jersey Chiropractors, North Brunswick, New Jersey, 2013

MRI Spine Interpretation: Bulge, herniated protruded, extruded, sequestered discs, differential diagnoses and clinical triage implications. MRI physics and slice protocols. Certification in MRI Interpretation ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division 2013

MRI History and Physics: Magnetic fields, T1 and T2 relaxations, nuclear spins, phase encoding spin, echo, T1 and T2 contrast, magnetic properties of metals and the historical perspective of the creation of NMR and MRI. Certification in MRI Interpretation, 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, Long Island, New York, 2013

MRI Spinal Anatomy and Protocols, Normal anatomy of axial and sagittal views utilizing T1, T2, 3D Gradient and STIR sequences of imaging. Standardized and desired protocols in views and sequencing of MRI examination to create an accurate diagnosis in MRI. Certification in MRI Interpretation, 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, Long Island, New York, 2013

MRI Disc Pathology and Spinal Stenosis, MRI interpretation of bulged, herniated, protruded, extruded sequestered and fragmented disc pathologies in etiology and neurological sequelae in relationship to the spinal cord and spinal nerve roots. Certification in MRI Interpretation, ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, CMCS Post-Doctoral Division, New York Chiropractic Council, New York State Department of Education, Board for Chiropractic, Long Island, New York, 2013

MRI Spinal Pathology, MRI interpretation of bone, intradural, extradural, cord and neural sleeve lesions. Tuberculosis, drop lesions, metastasis, ependymoma, schwannoma and numerous other spinal related tumors and lesions. Certification in MRI Interpretation ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, CMCS Post-Doctoral Division, New York Chiropractic Council, New York State Department of Education, Board for Chiropractic, Long Island, New York, 2013

MRI Methodology of Analysis, MRI interpretation sequencing of the cervical, thoracic and lumbar spine inclusive of T1, T2, STIR and 3D gradient studies to ensure the accurate diagnosis of the region visualized. Certification in MRI interpretation, ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, , CMCS Post-Doctoral Division, New York Chiropractic Council, New York State Department of Education, Board for Chiropractic, Long Island, New York, 2013

MRI Clinical Application, The clinical application of the results of space occupying lesions. Disc and tumor pathologies and the clinical indications of manual and adjustive therapies in the patient with spinal nerve root and spinal cord insult as sequelae. Certification in MRI 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 CMCS Post-Doctoral Division, New York Chiropractic Council, New York State Department of Education, Board for Chiropractic, Long Island, New York, 2013

MRI Normal Anatomy & Protocols, Spinal anatomy of all MRI views utilizing T1, T2, 3D Gradient, stacking and STIR sequences of imaging. Advanced protocols of MRI examination with multiple sequences to create concurrent diagnostic findings. Certification in MRI Interpretation, ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, CMCS Post-Doctoral Division, New York Chiropractic Council, New York State Department of Education, Board for Chiropractic, Ronkonkoma, New York, 2013

MRI Disc & Spinal Cord and Spinal Canal Pathology: MRI interpretation of spinal disc pathologies as a result of trauma and degenerative factors and resultant neurological compromise. Spinal Cord and Spinal canal pathologies and space occupying lesion interpretation. Certification in MRI Interpretation, ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, CMCS Post-Doctoral Division, New York Chiropractic Council, New York State Department of Education, Board for Chiropractic, Ronkonkoma, New York, 2013

MRI interpretation of Spinal Cord, Spinal Disc and Spinal Canal Disorders: MRI interpretation of herniated, protruded, extruded, bulged and sequestered discs & spinal stenosis as sequelae of ligamentous hypertrophy, congenital malformation, spinal cord pathology. Clinical necessity and contraindications. Certification in MRI Interpretation ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, CMCS Post-Doctoral Division, New York Chiropractic Council, New York State Department of Education, New York, 2013

MRI Interpretation of Herniated Disc and Spinal Cord and Root Encroachment: MRI interpretation of herniated, protruded, extruded, bulged and sequestered discs and their relationship to the spinal cord and spinal nerve roots and the clinical correlation to spinal adjustments, manual spinal therapy and joint mobilization. Certification in MRI Interpretation, ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, CMCS Post-Doctoral Division, New York Chiropractic Council, New York State Department of Education, 2013

Spinal Biomechanical Engineering: Differential diagnosis of pathobiomechanics in the cervical, thoracic and lumbar spine as sequellae to micro and macro trauma and chronic biomechanical instabilities. Understanding the clinical implications of long term biomechanical failure in resultant disc pathology, ligament pathology and osseous pathology. 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, CMCS Post-Doctoral Division, New York Chiropractic Council, New York State Department of Education, Board for Chiropractic, Boca Raton, Florida, 2013

Managing the No-Fault "PIP" Practice Under 2010 PIP Laws & Regulations, Review of current issues with regard to PIP/AICRA regulations as it regards to coding, fee schedule, decision point review, ability to order, read and interpret MRI findings. Certification in Review of current issues with regard to PIP/AICRA regulations, Association of New Jersey Chiropractors, New York Chiropractic College East Brunswick, New Jersey. 2010

Diagnostic Imaging: Interpreting Spinal Trauma with MRI, Certification in Diagnostic Imaging, New York Chiropractic College & Association of New Jersey Chiropractors, Hazlet, New Jersey, 2008

Whiplash and Brain Injury Traumatology, Spine Research Institute of San Diego Epidemiology of Whiplash Injuries and outcome studies. Accident Reconstruction principles used in low speed rear impact collisions. Electro diagnostic testing and their applications in whiplash., Spine Research Institute of San Diego,, Philadelphia, PA, San Diego, Pennsylvania, 2008 MUA Manipulation Under Anesthesia, Manipulation Under Anesthesia, Southern California University of Health Services, Saddlebrook, New Jersey, 2005

Certification in Quality Assurance & Utilization Review CHCQM #50676, Diplomate, American Board of Quality Assurance & Utilization Review Physicians: Health Care Quality and Management, Bethesda, Maryland, 1998 to present

American Medical Association Guides to the Evaluation of Permanent Impairments, American Medical Association Guides to the Evaluation of Permanent Impairments Certification in Certification on National AMA Impairment Ratings, Los Angeles College of Chiropractic, Whittier, California, 1993

Chiropractic Orthopedics 420 hours post-graduate course, Completed 420 hours post-graduate course in Chiropractic Orthopedics Certification in Chiropractic Orthopedics, Los Angeles College of Chiropractic, Postgraduate Division, Whittier, California, 1991

Scoliosis Determination Procedures, New Jersey Chiropractic Society, Edison, New Jersey, 1985

Acupuncture, 100 Hours Meridian Therapy/Acupuncture Course Certification in Completion, Logan College of Chiropractic, Logan College of Chiropractic, St Louis, MO, St. Louis, Missouri, 1980

SELECTED MEMBERSHIPS

The American Board of Quality Assurance & Utilization Review Physicians, Inc, Diplomate, 1998 - Present

Association of New Jersey Chiropractors, Member,

National Board of Forensic Chiropractors, Member, 1997

National Committee of Quality Assurance, Member, 1997

American Academy of Medical Legal Professionals, Diplomat, 2013