CURRICULUM VITAE

Richard A. Snow D.C., DABCA, FASA Choice of Health, P.A.
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Education:

Doctorate of Chiropractic	Cleveland Chiropractic College, Kansas City, MO. 2003
Bachelor of Arts	Ottawa University

Licenses and Certifications:

Fellowship in Spinal Biomechanics and Trauma

Course work and rotations approved through State University of New York, Jacobs School of Medicine and Biomedical Sciences 2021.

Fellowship Acupuncture Society of America F.A.S.A.

Learning 3 levels of treatment: pain control, formula, and traditional acupuncture. 12 main meridians: Lung, Large Intestine, Stomach, Spleen, Heart, Small Intestine, Bladder, Kidney, Circulation Sex, Triple Warmer, Gall Bladder, Liver. 2 Extra vessels; Conception Vessel, Governing Vessel. 12 kinds of points; tonification, sedation, source, alarm, associated, connecting, entry, exit, accumulation, Horary, antique, and intersection. Methods for stimulation: Japanese needles, Chinese needles, electrical stimulation, teishin, finger pressure, heat, cold, moxibustion, laser, Qi Gong, cupping, stapling. 1997

Diplomate Certification and Advanced Acupuncture Techniques

The premise of Acupuncture. Introduction into microsystems: Auriculo-therapy, Face, Scalp, Hand therapy. Five element theory, Eight extraordinary points and their use and Ghost points. Commonly used points. Advanced needling techniques. Use of the Eight confluent points. Discussion and workshop on acupuncture points for structural correction, sprain/strain, fibromyalgia, joint disorders, traumatic arthritis, gout, whiplash, TMJ, and rib subluxation. Diagnosis and treatment by Akabane points. Graphing, graph interpretation, and preparing an effective treatment plan. Forbidden point review. Intra-Dermal needling. The use of Scalp Acupuncture, 12 Divergent Channels, 15 Connecting Channels, Summary of research concerning channels and points. Eight miscellaneous channels. Thermal Reflex areas to diagnose excess or deficiency. 2000.

National Board of Chiropractic Examiners Acupuncture Examination

National Board examination, 2011.

Diplomate American Board of Chiropractic Acupuncture DABCA

Diplomate ACA Council of Chiropractic Acupuncture. Currently the highest level of testing in the Chiropractic profession. The only national recognized credential by major health insurance companies, 2011.

Trauma Team Member of the Academy of Chiropractic 2018

January 2004	Kansas State Board of Healing Arts
February 2004	Missouri State Board of Chiropractic Examiners
2003	The National Board of Chiropractic Examiners Part 1,2,3, and 4.
2003	The National Board of Chiropractic Examiners Physiotherapy

Post Graduate Education:

PAIN MANAGEMENT ROTATION

Specialty Research in Pain Management – Clinical and Procedural – *Growth of Interventional Pain Management Techniques and Current Trends in Pharmacological Management of Neuropathic Pain. ESI comparison to gabapentin in lumbosacral radicular pain* – current trends and future progress of pain management interventions. Mode of action, required dosage, advantages and side effects profiles of currently available pharmacological approaches. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020.

Specialty Research in Pain Management – Clinical and Procedural – *Therapeutic Effects of Spinal Injection Therapy* - Facet, medial branch blocks, prolotherapy and epidural interventions utilization within the Medicare population, effectiveness on lumbar central canal stenosis with and without steroids and effect on prevention of spinal surgery, herniated disc, fibromyalgia and chronic musculoskeletal pain. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020.

Specialty Research in Pain Management – Clinical and Procedural – *Adverse Events Associated with Injection Therapy* – transforaminal and interlaminar epidural steroid injections, anesthesia technical considerations, effects on cervical radiculopathy midline versus paramedian approaches and perineurial injection of autologous conditioned serum. Review of FDA risk assessment.

Academy of Chiropractic, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020.

Specialty Research in Pain Management – Clinical and Procedural – *Correlation of MRI Findings and Injection Outcomes* - MODIC Changes on MRI and effectiveness of facet injection, facet joint signal change on MRI with fat suppression comparison with SPECT/CT. Discussion of Modic 1, 2 and 3 with correlation of clinical outcomes and patient selection criteria. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020.

Specialty Research in Pain Management – Clinical and Procedural – *Therapeutic Effects of Botulinum Toxin and Dry-Needling in Myofascial Pain Syndrome* – cost effectiveness, patient response and triage of therapeutic interventions. Physiological review of trigger point etiology and clinical presentation of acute and chronic pain. Functional response of intervention including relief and recurrence. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020.

Specialty Research in Pain Management – Clinical and Procedural – *Systematic Review Technical Considerations in Cervical Epidural Analgesia* - Chemical blockage of cervical nerve roots, review of anatomical structures and correlation with MRI imaging. Blockage effects on the respiratory, circulatory and neurological systems. Review of cervical epidural space (CES) borders and variants in patient population. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020.

Specialty Research in Pain Management – Clinical and Procedural – *Trends in opioid analgesic abuse and mortality in the USA, Evaluation of Opioid Pain Management in Injured Children, assessment of opioid reporting in Veteran Affairs* – Emergency visitation in pediatric injury, pain management and adoption of best practices. Trends in use of prescription opioid medication using RADARS (Research Abuse, Diversion and Addiction Related Surveillance System), comparison between legitimate pharmacy channels and diversion and abuse. Opioid use prevalence and incidents in Veteran Affairs, new prescriptions or long-term conversion and relationship to persistent growth in opioid use. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

Specialty Research in Pain Management – Clinical and Procedural – *Electrodiagnostic Testing, Transforaminal Epidural Steroid Injection, Intra-articular Facet Joint Injection, Spinal Manipulation Post-Epidural Injection*– Needle EMG, active versus chronic denervation in lumbar, cervical spinal pathologies and differential diagnosis of spinal stenosis and intervertebral disc herniation. Systematic review of facet joint injections, clinical trials and conservative therapy in lower back pain. Results of spinal manipulation post-epidural injection in the cervical spine. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

Specialty Research in Pain Management – Clinical and Procedural – *Radiofrequency Ablation and outcome measures* - medication, function and pain in relation to pain of spinal origin. Medial Branch Block as prognostic tool prior to lumbar facet radiofrequency denervation. Clinical comparison disc herniation, disc bulge, cervical and lumbar radiculopathy. Diagnosis and patient triage correlation to anatomical spine structures. Long, short term risk factors and outcomes in radiofrequency ablation. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

Specialty Research in Pain Management – Clinical and Procedural – *Role of Cannabinoids in Pain Management* – review of pharmacological, botanical or synthetic origins of cannabinoids. Mechanism of action in alleviation of pain including analgesic, anti-inflammatory effects, modular actions on neurotransmitters and interactions with prescribed or endogenous opioids. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

MRI PHYSICS ROTATION

Specialty Research in MRI Physics – *The Hardware* – magnet types including permanent, resistive and superconducting magnets. Volume RF, surface, quadrature and phase array coils and other hardware necessary for the generation of MRI imaging. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

Specialty Research in MRI Physics – *Physics of Image Generation 1* – magnetization, excitation, relaxion, acquisition, computing and display. T1 relaxion and relaxation curves, T2 relaxation, phase and phase coherence, T2 relaxion curves. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

Specialty Research in MRI Physics – *Physics of Image Generation 2* – gradient coils, signal coding including slice encoding gradient, phase encoding gradient, Frequency encoding gradient. Gradient specifications and slice thickness. Filling k-space, k-space symmetry and k-space filling technique. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

Specialty Research in MRI Physics – *Physics of Image Generation* 3 – pulse sequences, spine echo sequences including multi-slicing and multi-echo sequencing. T1, T2, proton density contrast and their applications. Turbo spine echo, fast advanced spine echo (HASTE) sequence and gradient echo sequence. Inversion recovery sequence including STIR and FLAIR sequence. Choosing the right sequence pros and cons, T1, T2 and PD parameters. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

Specialty Research in MRI Physics – *Physics of Image Generation* – technical parameters and artifacts – repetition time, echo time, flip angle, inversion time, number of acquisitions, matric and field of view. Slice thickness, slice gap, phase encoding direction 1 and direction 2 and relation to bandwidth. Motion artifact, para-magnetic artifact, phase wrap artifact, susceptibility artifact, clipping artifact, spine and zebra artifacts. Effects on image quality and acquisition. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

NEURORADIOLOGY ROTATION

Specialty Research in Neuroradiology – *radiographic evolution of a Schmorl's* node – acute Schmorl's node and progression to chronic stage comparison to serial MRI. Endplate fracture and acute presentation and correlation to clinical findings and pain patterns. Presentation in plain film radiograph and MRI images were compared and contrasted in both acute and chronic stages. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

Specialty Research in Neuroradiology – *syringomyelia, fluid dynamics and spinal cord motion* – scoliosis curve patters and syrinx characteristics versus Chiari I malformation. Normal MRI appearance and motion artifacts related to cerebral spinal fluid motion related phenomena and common appearances on MRI imaging. Syrinx wall and fluid motion and correlation to cardiac cycle with comparison between systolic and diastolic presentations. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

Specialty Research in Neuroradiology – *Spinal Biomechanics, Thoracolumbar Deformity and Surgical Outcomes* – full spine analysis, adjacent spinal biomechanics and its impact on surgical outcomes. Sagittal alignment pelvis to cervical spine and association with kyphosis and lordosis mechanical positioning. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

Specialty Research in Neuroradiology – *MRI and EMG comparison in denervated muscle diagnosis* – lumbar spine pathology and age in relation to paraspinal muscle size and fatty infiltration. Fatty degeneration of paraspinal muscle in degenerative lumbar kyphosis and CT versus MRI digital analysis. Positive correlations with edema on MRI and fibrillations, positive sharp waves, denervation and the level of reduced recruitment pattern. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

Specialty Research in Neuroradiology – *association between annular tear and disc degeneration* – high intensity zone (HIZ) in lumbar disc and association to annular fissure on MRI. Identification of duel HIZ and its relationship to acute inflammation and calcified tissue and its association with discogenic pain patterns. Influence of phenotype, population size and inclusion sequence. T1, T2 and STIR imaging comparison and correlation. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

Specialty Research in Neuroradiology – *degenerative cervical myelopathy* – paraspinal muscle morphology, clinical symptoms and functional status. Review of fatty infiltration, asymmetry findings and correlation with clinical symptoms and functional scores. Review of complex anatomical arrangement of superficial and deep muscle layers in the cervical spine, correlation to MRI findings. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

Specialty Research in Neuroradiology – *MRI Neurography, Diffuse Tensor Imaging (DTI)* – diagnostic accuracy and fiber tracking in spinal cord compression. Review of spinal cord structural integrity, peripheral neuropathy and correlation to diffuse tensor imaging findings. Comparison in combining DTI with T2 and T2 alone and its value in magnetic resonance neurography. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

Specialty Research in Neuroradiology – *Nomenclature and Classification of Lumbar Disc Pathology* – modified Pfirrmann grading system and lumbar disc degeneration. Consensus driven description of intervertebral disc nomenclature including intervertebral disc bulge, herniation, protrusion, broad based disc herniation, extrusion and sequestration. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

Specialty Research in Neuroradiology – *MRI evaluation of intradural tumor* – neuroimaging of spinal tumors and correlation to histological study. Determining method of choice for evaluation, review of numerous types of intradural-extramedullary masses including meningioma and schwannoma. Signal intensities, contrast enhancement patterns, presence of cysts and other key differentiation findings of spinal cord tumors. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

Specialty Research in Neuroradiology – *Spinal Cord Compression, Myelomalacia, MRI Imaging and Clinical Correlation* – positional cervical spinal cord compression and fibromyalgia. T1 and T2 weighted images, comparison of hypo and hyperintense signals and extent of intramedullary changes on MRI. Review of MRI findings associated with myelomalacia and discussion of correlation with clinical findings. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

Specialty Research in Neuroradiology – *MRI Characteristics of Lumbar Facet Synovial Cyst* – formation characteristics of synovial cyst, relation to degenerative changes in spinal facet joints as demonstrated on MRI. Pre and post-surgical procedural MRI were reviewed and compared. Surgical management and subsequent resection were demonstrated. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

Specialty Research in Neuroradiology – *Variability in MRI Diagnostic Error Rates* – in depth review of quality of MRI imaging and comparison to consistent MRI diagnosis between facilities. Errors of interpretation in the study examinations were considered and presented. Impact of radiological diagnosis, location of MRI study and reading radiologist and impact on treatment choice and clinical outcomes. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

ORTHOPEDIC SURGERY – EXTREMITY ROTATION

Specialty Research in Orthopedic Extremity Surgery – *Wrist Anatomy and Osseous Kinematics* – normal kinematics using biplanar radiographic model were reviewed. Discussion of extensive database of carpal bone anatomy and kinematics from a large number of healthy subjects. 3-D motion of each bone was calculated for each wrist position and discussed. Database constructed including high-resolution surface models, measures of bone volume and shape, and the 3-D kinematics of each segmented bone. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Orthopedic Extremity Surgery – *Normal Motion of the Shoulder and Glenohumeral Instability* – normal motion of the shoulder joint compared with clinical implications of glenohumeral joint instability including surgical recommendations. Review and overview of the anatomy of the glenohumeral joint, emphasis on instability based on the current literature. Description of detailed anatomy and anatomical variants of the glenohumeral joint associated with anterior and posterior shoulder instability. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Orthopedic Extremity Surgery – *Orthopedic Testing and Shoulder Pathology Diagnosis* - use of orthopedic special tests (OSTs) to diagnose shoulder pathology and clinical examination. Review OST clusters, examination of methodology and illustration of their use in arriving at a pathology-based diagnosis. Discussion of examination of the biceps tendon and clinical relevance. Review of SLAP lesion and shoulder impingement syndrome were reviewed. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Orthopedic Extremity Surgery – *Electrodiagnostic Testing and Carpal Tunnel Syndrome* – Review of the most common mononeuropathy in the human body. Relationship between clinical findings, neurological examination and electrodiagnostic testing in the diagnosis of carpal tunnel syndrome. Acute and chronic symptoms including progression of the disorder were reviewed. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Orthopedic Extremity Surgery – *Current Concepts in Elbow Disorders* – Detailed anatomy of osseus, ligamentous and muscular structure of the elbow was reviewed. Common disease of elbow disorders and their treatment was discussed. Lateral epicondylitis and medial collateral ligament injury of the elbow were outlined. Rheumatoid arthritis, posttraumatic osteoarthritis, and elderly patients with comminuted distal humeral fractures. Surgical design and technique were outlined. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Orthopedic Extremity Surgery – *Differentiating Cervical Spine from Shoulder Pathology* – anatomical review of cervical spine and glenohumeral joint focus on similarities and differences. Cervical disorders masking shoulder pain, cervical radiculopathy, cervical spondylotic myelopathy, facet and discogenic pain patterns were outlined. Details of shoulder pathology parsonage-tuner syndrome, subscapular neuropathy and thoracic outlet were presented. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Orthopedic Extremity Surgery – *MRI of the Shoulder and Shoulder Girdle* – review of MRI analysis of scapular fracture. Detailed review of scapular function rehabilitation and training on chronic pain syndromes. Reliability of magnetic resonance imaging versus arthroscopy for the diagnosis and classification of superior glenoid labrum anterior to posterior lesions. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Orthopedic Extremity Surgery -*Cataloging Movements of the Ankle, Hip and Spine* - Review Standardization and Terminology Committee (STC) of the International Society of Biomechanics (ISB) and classification of joint kinematics. Standard for the local axis system in each articulating bone is generated and presented. Rationale for international standards among researchers was presented. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Orthopedic Extremity Surgery -*Cataloging Movements of the Shoulder, Elbow, Wrist and Hand* - Review Standardization and Terminology Committee (STC) of the International Society of Biomechanics (ISB) and classification of joint kinematics. Standard for the local axis system in each articulating bone is generated and presented. Rationale for international standards among researchers was presented. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Orthopedic Extremity Surgery – *MRI and Diagnosis of Shoulder Disorders* – normal and abnormal shoulder anatomy as viewed on MRI was presented. Review and presentation of MRI in the diagnosis and treatment of brachial plexus injury. Discussion of preganglionic avulsions and muscular denervation. Comparison of CT myelography to MRI myelography were outlined. Enhanced three dimensional T1 high-resolution isotropic volume excitation MR in the evaluation of shoulder pathology. Comparison with two-dimensional enhanced T1 fat saturation MRI were discussed. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Orthopedic Extremity Surgery – *Clinical Evaluation of Upper and Lower Extremity Pathology* – review of relevant anatomy in shoulder, elbow, wrist, hip, knee and ankle was presented. Physical examination including orthopedic, neurological and range of motion testing was presented and compared with findings on MRI results. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

ORTHOPEDIC SPINE SURGERY ROTATION

Specialty Research in Orthopedic Spine Surgery – *Fusion Surgery and Lumbar Stenosis* – efficacy of fusion and decompression surgery in patients with lumbar spinal stenosis. Review of degenerative spondylolisthesis and patient selection criteria. Discussion of correlation of MRI, CT findings and clinical evaluation. Review of sedimentation sign on MRI and indications of prognostic factors. Surgery versus nonsurgical treatment outlined and outcomes discussed. Compensation for lumbar spinal stenosis and clinical sagittal plane deformity was presented. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Orthopedic Spine Surgery – *Posterior Lumbar Interbody Fusion and Adjacent Segment Degeneration (ASD*) – adjacent segment degeneration as major consequence of spinal fusion. Review of occurrence and location with correlation between surgical outcomes were discussed. Discussion of age, BMI and pre-existing stenosis in cranial adjacent segment as risk factors. ASD prevalence in radiographic evidence between cranial and caudal segments were reviewed. Presentation of risk factors and pre-operative radiological features. Facet sagittalization and tropism were discussed. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Orthopedic Spine Surgery – *Morbidity and Mortality Predictions in Spinal Surgery* – Review of the Charlson Comorbidity Index (CCI) and the American Society of Anesthesiologist (ASA) Physical Status Classification System. Review of index outcomes and relation to costs of care. Discussion of index rating and likelihood of complications. Review of classification system in cerebral spinal fluid (CSF) leaks. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Orthopedic Spine Surgery – *Spondylolisthesis, clinical and radiographic classifications* - classification system that considers disc space height, sagittal alignment and translation, and the absence or presence of unilateral or bilateral leg pain was discussed. Detailed review of spondylolisthesis etiology, clinical presentation and imaging findings was reviewed. Review of inter and interobserver reliabilities of radiographic and clinical criteria. Review of consensus driven treatment options for degenerative spondylolisthesis presented. Transforaminal Lumbar Interbody Fusion (TLIF) in degenerative disc disease with associated spondylolisthesis grade I was reviewed and correlated. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Orthopedic Spine Surgery – *Sagittal Alignment and Spinal Surgery, Clinical Outcomes and Follow up* – discussion of outcomes and sagittal alignment in single unilateral transforaminal lumbar interbody fusion (TLIF). Detailed review of surgical TLIF procedure and associated mid and long-term clinical outcomes. Discussion and presentation of influence of pelvic incidents and lumbar lordosis mismatch and post-operative residual symptoms. Analysis of adjacent segment disease following fusion. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Orthopedic Spine Surgery – *Complications and Outcomes in Adult Spinal Deformity Surgery* – review of surgical approaches and complications in correction of adult spinal deformity. Relevance of age, comorbidities, blood loss, osteoporosis and smoking were discussed. Discussion of Cobb Angle, Sagittal Vertical Axis, Pelvic Tilt, Thoracic Kyphosis were reviewed and examined in relation to transpsoas lateral interbody fusion (LIF), percutaneous pedicle screw (PPS), transforaminal lumbar interbody fusion (TLIF). Comparison between minimally invasive and traditionally open procedures was provided and reviewed. Discussion of minimally invasive surgery options were emphasized and outcomes reviewed with correlation to diagnosis and procedural coding. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Orthopedic Spine Surgery – *Surgical Interventions in Lumbar Disc Herniation* – review of differences in surgical treatment of recurrent lumbar disc herniation. Clinical correlation between plain film radiography, MRI studies and clinical presentation were reviewed. Data on frequency in management of recurrent lumbar intervertebral disc herniations presented. Duration of symptoms and influence of patient outcomes in sciatica patients undergoing micro-discectomy and decompressions. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Orthopedic Spine Surgery – *Length of Stay in Lumbar Spinal Surgery* – discussion on epidemiology of lumbar surgery outcomes and hospital stay. Correlation to clinical presentation and comorbidities were reviewed. Outline of decompression and instrumental fusion in the lumbar spine. Review of costs of lumbar surgery, trends in hospital stay and costs both on a cumulative and daily basis. Comparison of the nationwide inpatient sample and national surgical quality improvement program databases for lumbar spine fusion procedures was reviewed and presented. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Orthopedic Spine Surgery – *Pre-Surgical Planning and Implant Design* – 3-D printing and surgical planning discussion a variety of historical materials in the creation of patient specific implants based on unique individual anatomy. Historical trends in the creation of prosthetics with 3-D modeling software using neuroimaging data. Review of treatment complex spinal pathologies and surgical planning was discussed. Outline of current and future barriers to global implementation and commercialization was reviewed. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Orthopedic Spine Surgery – *Spine Surgery Procedures in Medical Specialty Training* – discussion of current spine surgery training including fellowship programming in the United States. Accreditation Council for Graduate Medical Education (ACGME) cases logs were reviewed and discussed. Variability of procedures within programs and between medical specialty programs were outlined. Differential utilization between orthopedic and neurosurgical fellows was reviewed. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Orthopedic Spine Surgery – *Cerebral Spinal Fluid Dynamics, Central Nervous System Pathology and Intracranial Hypotension* – pathophysiology and various craniospinal disorders. Directional phase contrast MRI (4D Flow) was reviewed along with the anatomical and physiological properties of cerebral spinal fluid. Specific disorders such as Alzheimer's disease, hydrocephalus, Chiari Malformation and syringomyelia. Clinical correlation of CSF dynamics to understanding disease process was reviewed including normal and abnormal flow patterns. Recent advancements in fluid flow studies were outlined and presented. Signal intensity changes on MRI study in cervical spondylotic myelopathy was discussed and compared to normal parameters. Fluid dynamics patterns within syringomyelia and Chiari malformation was discussed and correlated to MRI findings and clinical presentations. Spinal microsurgical exploration surgery and resultant CSF leak and spontaneous intractable intracranial hypotension was reviewed and its pathoanatomical presentation outlined. Review of the natural and surgical history of Chiari malformation Type I in pediatric population and clinical correlation with MRI studies. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

NEUROSURGERY ROTATION

Specialty Research in Neurosurgery – *Anatomy and Physiology of the Blood Brain Barrier* – Review of consequences of alterations in homeostatic control of the neuronal environment. Discussion of blood flow alterations and altered vessel permeability as determinants in the pathophysiology of brain injury. Review present day literature on the anatomy, development and physiological mechanisms of the blood–brain barrier. The blood brain barrier's role in the maintenance of the extracellular environment. Vascular anatomy of the spinal cord was review in relation to the physiology of the neural environment. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Neurosurgery – *Spinal Cord Anatomy, Physiology and Vascular Reactivity* – detailed review of the blood supply of the spinal cord, anatomy of the vascular system and physiology of blood flow. Pathophysiology of various conditions including Thoracic Aortic Occlusion and Spinal Cord Injury were discussed with specific relation to risk of neurological deficit. Severity and duration as an effect was reviewed and correlated clinically. Cerebral circulation and aging, discussion of effects on cognitive functioning and cerebrovascular disease in aging. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Neurosurgery – *Upper Cervical Spine Anatomy and Cerebral Spinal Fluid Flow* – MRI flow imaging and computational fluid dynamics in healthy patients with Chiari Malformations. Review of abnormal cerebral spinal fluid flow oscillations and their effects on healthy patients. Discussion of nonlaminar complex spatial and temporal variations with associated pressure waves and pressure gradients causing syringomyelia, headaches and other clinical manifestations in Chiari I malformation. Microsurgical anatomy and internal architecture of brainstem in 3D images and surgical considerations. CSF hydrodynamic changes, spinal cord injury and development of post traumatic syringomyelia (PTSM). Impact of spinal cord nerve roots and denticulate ligaments on cerebral fluid dynamics in the cervical spine was reviewed and discussed. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Neurosurgery – *Compression and Degeneration in Chronic Nerve Root Entrapment* – differentiation between peripheral nerves and spinal nerve roots and effects of electrostimulation. Discussion of various stimulating or recording neurosurgical implants and success vs failure rates. Review of the nerve root compression and its relation to consequences of disc herniation and acute compression during surgery. Maximum pressure level a spinal nerve root can sustain is reviewed. Discussion of microsurgical anatomy of lumbosacral nerve rootlets, Rhizotomy and chronic spinal cord injury. Review of qualitative grading of severity of lumbar spinal stenosis on morphology of dural sac on MRI studies, review of classification systems and the consideration of impingement of neural tissue. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Neurosurgery – *Anatomy of Circle of Willis, Cerebral Arteries and Stroke Etiology* – discussion of stroke by embolism, source and cause in diagnosis and long-term treatment. Review of complex nature of embolus transport and its relation to etiology. Image based hemodynamics with discrete particle dynamics in relation to the distribution of emboli across the various cerebral arteries. Detailed anatomy of Circle of Willis reviewed and discussed with particular focus on size/inertia dependent trends in embolus distribution to the brain, distribution of cardiogenic versus aortogenic emboli among anterior, middle and posterior cerebral arteries, left versus right brain preference in cardio-embolus and aortic emboli transport and source-destination relationship for embolisms affecting the brain. Detailed review of the microsurgical anatomy of the posterior cerebral artery in three dimensional images. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Neurosurgery – *Stroke Therapy, Implementation and Cost-Effectiveness* – review of endovascular therapy in addition to standard care in acute ischemic vessel occlusion stroke. Comparison in National Institutes of Health Stroke Score (NIHSS) score, symptom onset, Alberta Stroke Program Early CT Score (ASPECTS) and occlusion location. Considerations in acute management and revascularization of tandem occlusions in acute ischemic stroke with literature review. Discussion of Transcirculation Pipeline embolization device deployment as a rescue technique. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Neurosurgery – *Surgical Approaches and Outcomes in Spine Surgery 1* – review of historical interventions, multilevel decompression and instrumented fusion in reduction of neural compression and spinal column stabilization. Discussion of morbidity and mortality in relation to surgical procedures. The use of the modified fragility index to predict 30-day morbidity and mortality from spine surgery. Differences in patient selection for minimally invasive versus open surgical procedures, and review of post-surgical outcomes. Morbidity, mortality and health care costs for patients undergoing spine surgery following ACGME resident duty-reform. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Neurosurgery – *Surgical Approaches and Outcomes in Spine Surgery 2* Predisposing factors for dural tears in lumbar spine surgery including degenerative conditions, prior surgery and age related indicators were reviewed. Discussion and review of re-admission rages in spine surgery through metanalysis and systematic review. Bibliometric study of the most important minimally invasive (MIS) spine surgery papers including Level III and IV studies with focus on moving toward Level I and Level II. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

EMERGENCY MEDICINE ROTATION

Specialty Research in Emergency Medicine – *Emergency Medicine and Spine Pain* – review of lack of guidelines for the management of lower back pain in the ED. Frequency of lower back pain visitation in the emergency department including environmental/sociocultural dimensions and physical/psychospiritual dimensions were reviewed. Discussion of utilization of significant healthcare resources with complete description of lower back pain characteristics, health services use in non-urgent lower back pain patients presenting to the ED. Managing spine pain in the ED using usual and customary medical intervention. Extent of appropriate CT and MRI scans in the hospital setting, accessibility reviewed in conjunction with presented national data. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Emergency Medicine – *Medication Usage and Motor Vehicle Accidents* – review of ADHD medication utilization and motor vehicle accident data and frequency of motor vehicle accident sin this specific patient population. Review of the prevalent and preventable cause of morbidity and mortality among patients and concepts of restricting based on prognostic factors. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Emergency Medicine – *Emergency Department Imaging Perspectives* – review of imaging protocols among a spectrum of clinical indications, perspective on aging populations and clinical complexity. Review of CT, MRI, plain film imaging and ultrasound and their relationships to internal medicine and musculoskeletal disorders examined on an emergency basis through patient generated national survey data. Details of specific contexts in which imaging has become concentrated and targeted efforts for optimization of utilization. considerations of utilization of CT in the emergency department and evaluation to increasing trends. Review of quality improvements in imaging utilization. Comparison between pediatric and adult imaging protocols and trends. Discussion and analysis of “Choose Wisely” recommendations and creating of guideline/policy/clinical pathways in New England EDs. MRI utilization in pediatric ED reviewed and analyzed. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Emergency Medicine – *Cauda Equina Syndrome and Other Emergent Conditions* – traumatic injuries to the thoracolumbar spine and overall impact on emergency services. Discussion of exact definitions of Conus Medullaris Syndrome (CMS) and Cauda Equina Syndrome (CES). Diagnosis in acute phase and radiological findings clinically correlating with physical examination findings. Parameters for spinal regions of traumatic injury were presented and reviewed. Case presentations for neck and spine were included and reviewed with particular focus on differential diagnosis and case uniqueness. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Emergency Medicine – *Emergency Medicine Residency Curriculum* – review of Ohio State University Emergency Medicine Residency Program Musculoskeletal Emergencies Curriculum. Outline of the significant nature of musculoskeletal emergency presentations to ED. Details in the training required to master clinical experience, self-directed learning and small group didactics. Case study reviews and discussion was presented with particular focus on infection vs non-infections and traumatic vs non-traumatic presentations in ED. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Emergency Medicine – *Opioid vs Non-Opioid Medications in the Emergency Department* – discussion of limited evidence of long-term outcomes of opioids with non-opioid medication for chronic pain. Literature review on effectiveness for opioid interventions. Discussion of alternative recommendations, evidence demonstrating lack of benefit and poor long term outcomes. Variation in physician opioid prescriptions discussed. Patterns of opioid initiation at first visits for pain in the ED in the United States including frequency and dosage. Emergency Department data concerning the persistent pain after motor vehicle accidents and comparison between opioid and NSAID prescribed in the ED. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Emergency Medicine – *Concussion and Repeat ED visits* – review of patients presenting to ED with concussion with re-visitation within 72 hours. Mechanism of injury including closed head injury, assault, fall and motor vehicle accidents discussed. Epidemiological evidence presented regarding number of visitations, characteristics and care paths reviewed. Discussion of adoption of a more comprehensive discharge plan to further prevent repeat visits was outlined. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Emergency Medicine – *CDC Epidemiology of ED Visits in the United States, Adults Over 65 and Motor Vehicle Accidents* – Evaluation of data from the National Hospital Ambulatory Medical Care Survey and frequency of ED visitation. Percentage of visits requiring hospital admission was reviewed along with patterns of need for critical care. Review of imaging ordering statistics and clinical diagnosis was discussed. Details of primary and secondary ED diagnosis presented in relation to sprain/strain, contusion and spinal pathology including herniated intervertebral disc, facture and spinal cord compression. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Emergency Medicine – *National Hospital Ambulatory Medical Care Survey* – a review of the current representative data on ambulatory care visits to hospital emergency departments in the United States. Demographics, residence, insurance class, chief complaint with focus on traumatic injury, diseases of the nervous and musculoskeletal systems were outlined. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Emergency Medicine – *Lower Back Pain and Emergency Room Visits* – detailed analysis of impact of lower back pain on ED globally. First systematic review of the trends in the literature including lower back pain as significant complaint and the variables in its definition. Discussion of the proper diagnosis and triage of lower back pain and its current impact on ED management was reviewed. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Emergency Medicine – *Spinal Cord Injury without Radiographic Abnormality (SCIWORA) in* Adults – case reports – detailed review of Spinal Cord Injury without Radiographic Abnormality was presented. Syndrome of post traumatic myelopathy demonstrable on MRI with no evidence of osseous injury on plain film or CT scan. Reporting of incidence was included with detailed discussion of case presentations, accurate diagnoses and triage was reviewed. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Emergency Medicine – *CDC Traumatic Brain Injury Data* – Related Emergency Department Visits, Hospitalizations, Deaths – United States, 2007 and 2013 – traumatic brain injury, short and long term adverse clinical outcomes, death and disability reviewed and compared based on CDC data over a 7 year period. Mechanism of causation including motor vehicle accidents, falls and assault. Public health recommendations and interpretation of data was presented. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Emergency Medicine – *CDC Data, Trends in Emergency Department Visits for Ischemic Stroke and Transient Ischemic Attack* – relationship between stroke and statistical cause of death, type of stroke and prognosis related to recurrence was discussed. Specific definitions of ischemic stroke, transient ischemic attack with etiology and relationship to emergency visits were outlined and presented. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Emergency Medicine – *US Emergency Department Use by Children* – pediatric utilization of emergency medicine resources, description of trends on a national basis. Detailed analysis of specific demographics including race and resident status were reported and reviewed. Discussion in allocation of resources including insurance class and coverage were reviewed. Anticipated expansion of Medicaid was considered and reviewed. Estimates of nonurgent ED visits by children were presented and discussed. Academy of Chiropractic, State University of New York at Buffalo, Jacobs School of Medicine, 2021

PRIMARY CARE/INTERNAL MEDICINE ROTATION

Specialty Research in Primary Care and Internal Medicine – *Supply of Chiropractic Care and Visits to Primary Care Physicians for Neck and Back Pain* – discussion of primary care visits and lower back pain. Expenditures and contributions to disability data. Discussion of supply of chiropractic care in context of visits for lower back pain and primary care physicians. Estimated national impact of primary care visits and expenditures was outlined with a focus on chiropractic's assistance in managing lower back pain. Defining an "episode" of lower back pain and relationship to collection of epidemiological data. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Primary Care and Internal Medicine – *Safety of Chiropractic Care in Lower Back Pain and Migraine Headaches* – review of adverse events associated with chiropractic care in the treatment of migraine. Outline of a prospective 3-armed, single-blinded, placebo RCT. Discussion of transient and mild events following chiropractic intervention. Randomized clinical trials and meta-analysis reviewed and discussed relating to the diagnosis and management of lower back pain including adverse event reporting. Risk of injury to the head, neck or trunk following an office visit for chiropractic spinal manipulation, as compared to office visit for evaluation by primary care physician. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Primary Care and Internal Medicine – *Chiropractic and Pain Management in Primary Care* – evaluation of the analgesic effects of spinal manipulation on both healthy and pain inflicted patients. Discussion of evidence of increased in pressure pain thresholds in musculoskeletal pain at both local and remote sites. Detailed knowledge of patient population regarding demographics and socioeconomic factors as well as disease-specific characteristics. Suggestion that lower back pain should not be seen as benign and self-limiting with focus on management. Describe the communication system surrounding the management of chronic pain from the perspectives of allopathic providers, acupuncture and chiropractor providers, and chronic musculoskeletal pain patients. Chiropractic manipulative treatment (CMT) association with lower healthcare costs among multiply-comorbid Medicare beneficiaries with an episode of chronic low back pain was reviewed. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Primary Care and Internal Medicine – *Perceptions of Chiropractic Care* – demographic review of data on the perceptions of chiropractic care. Review of patient interest, trustworthiness, costs and frequency of visits was discussed. Nationally representative survey to compare characteristics and use of survey respondents with positive and negative perceptions of DCs and chiropractic care. Positive perceptions of DCs were more common than those for chiropractic care. US adults generally perceive DCs in a positive manner. Describe the preferences of older adults for low back pain co-management by MDs and DCs and identify their concerns for receiving care under such a treatment model. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Primary Care and Internal Medicine – *Chiropractic and Post-Surgical Care and Care for Veterans* – discussion of persistent post-surgical lower back and radicular pain response to chiropractic care. Relevant anatomy related to lower back pain and intervertebral disc injury was outlined and presented. Discussion and development of an integrated care pathway for doctors of chiropractic, primary care providers, and mental health professionals who manage veterans with low back pain, with or without mental health comorbidity, within Department of Veterans Affairs health care facilities. Support for the inclusion of chiropractic care as a component of multidisciplinary health care for low back pain, as currently recommended in existing guidelines with a focus on US Service Members. Discussion of availability of chiropractic care to military healthcare systems, referral and interprofessional communication models. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Primary Care and Internal Medicine – *Effects of Chiropractic Care Combined with Medical Care, First Contact and Provider Type* – differences in outcomes, patient satisfaction, and related healthcare costs in spinal, hip, and shoulder pain patients who initiated care with medical doctors (MDs) vs those who initiated care with doctors of chiropractic (DCs). Pain of muscuoloskeletal origin and epidemiology of reduced productivity. Comparison of data on health outcomes, patient satisfaction, and related healthcare costs in patients consulting differing first-contact care providers for musculoskeletal pain. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Primary Care and Internal Medicine – *Integrating Chiropractic Care into Primary Care and Private Sector Healthcare Facilities* – suggestion of a diverse role for chiropractors within conventional health care facilities. Discussion of chiropractic's effectiveness for managing musculoskeletal disorders, particularly spine-related pain and disability. Descriptions of doctors of chiropractic who work in nongovernmental, private sector health care settings in the United States. Shared electronic health records, face-to-face informal consultations methods for interprofessional communication. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2021

Specialty Research in Primary Care and Internal Medicine – *American College of Physicians – Guideline Recommendations* – Non-Invasive and Non-Pharmacological - American College of Physicians (ACP) developed this guideline to present the evidence and provide clinical recommendations on noninvasive treatment of low back pain. Systematically review the current evidence on non-pharmacologic therapies for acute or chronic non-radicular or radicular low back pain. Comparative benefits of non-pharmacological therapies in acute/subacute low back pain including exercise, spinal manipulation, lumbar supports, acupuncture, laser, ultrasound and traction. Discussion of first and second line therapies with reduction in opioid prescription. ACCME Joint Sponsorship with the State University of New York at Buffalo, Jacobs School of Medicine, 2020

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

2021 Spine Management Conference – West – Chiropractic Evidence – Pain Management Care
Outline of neurological mechanisms of central nervous system modulation of pain in the human body was demonstrated. Specific peer-reviewed, medically indexed evidence was presented starting with 2012 Systematic Review outlining spinal manipulation's effectiveness in pain management. Current evidence as well as future trends were discussed and presented. Neurological downregulation was discussed including afferent and efferent neurological pathways regulated by the dorsal horn of the spinal cord. Interprofessional communication and compliant documentation of the pain management phase of care was emphasized. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University of Health Sciences, College of Chiropractic, Kansas City 2021.

2021 Spine Management Conference – West – Chiropractic Evidence – Corrective Care
Specific trends in the biomechanical assessment of the human spine were provided and discussed. Emphasis was placed on the transfer of laboratory based biomechanical science and clinical utilization of biomechanical parameters in the diagnosis and correction of spinal biomechanical pathology. Peer reviewed medically indexed publications defining symptomatic vs asymptomatic were presented and discussed. Sagittal alignment and its relation to pelvic incidence was reviewed in relation to asymptomatic parameters. Interprofessional communication relating to biomechanical stabilization and spinal rehabilitation was outlined and reviewed. Review of a regional versus whole spine model of spine management was presented emphasizing the needs of the patient, primary care physician, pain management physician and spine surgeon. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University of Health Sciences, College of Chiropractic, Kansas City 2021

2021 Spine Management Conference – West – Physical Examination Workflows – Cervical Spine

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

2021 Spine Management Conference – West – Physical Examination Workflows – Thoracic and Lumbar Spine and Pelvis

Outlines of thoracic, lumbar and pelvis physical examination were presented. Neurological evaluation of the lumbar spine and surrounding structures was
reviewed including pathological reflexes, assessment of cauda equina syndrome and triage processes for neurologically compromised patients. Detailed screening was stressed and its correlation to physical examination, red flags and relative vs absolute contraindications to chiropractic care was reviewed. Patient positioning and efficient processes was reviewed and demonstrated. Details relating to lumbar spine and pelvic orthopedic testing was discussed. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University of Health Sciences, College of Chiropractic, Kansas City 2021

2021 Spine Management Conference – West – Interprofessional Communication and Reporting

Review of electronic health record workflows were presented and discussed with emphasis on CPT compliant and efficient reporting. The importance of communication with the patient's other healthcare providers was outlined and discussed. Specific needs of the primary care physician, pain management physician and spine surgeon were outlined and reviewed. Details of simplified vocabulary and necessity of thoroughness were emphasized. Administrative workflows ensuring regular and continued communication of clinical documentation was provided. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University of Health Sciences, College of Chiropractic, Kansas City 2021

2021 Spine Management Conference – West – Patient Communication

Communication techniques were discussed with emphasis on patient comprehension to increase compliance and reduce patient anxiety. Details were presented on simplification of complex medicalterminology to ensure understanding at the initial visitation as well as throughout the patient's care plan. Conversational interaction and dissemination of health information at the appropriate comprehension level was provided. Proper reporting and interprofessional communication were emphasized in a wholistic approach to supporting the patient's needs. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University of Health Sciences, College of Chiropractic, Kansas City 2021

2021 Spine Management Conference – West – Intervertebral Disc Morphology

Detailed discussion of the morphological descriptions of intervertebral disc pathology in the cervical, thoracic, and lumbar spine was presented. Differential diagnosis of disc bulge, herniation, protrusion, extrusion, and sequestration were presented. Attention was given to the five grades of annular fissure associating circumferential, radial, and transverse morphology. High intensity zone (HIZ) was discussed in detail as well as its correlation to acute inflammatory fluid. Specific MRI images were presented and correlated to consensus driven definitions of intervertebral disc pathology. Pre-existing degenerative changes in the human spine such as disc osteophyte complex, spondylosis, increased innervation of the intervertebral disc and endplate changes were discussed and correlated to acute findings on MRI. In depth discussion of the difference between morphology and etiology of intervertebral disc pathology was outlined. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University of Health Sciences, College of Chiropractic, Kansas City 2021

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

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

2021 Spine Management Conference – West – Causality and Spinal Ligamentous Injury

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

2021 Spine Management Conference – West – Differential Spinal Tissue and Spinal Injury Triage

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

2021 Spine Management Conference – West – Innervation of Spinal Structures

Specific reviewed of the anatomical innervation of pain generating structures in the human spine was presented. Scientific chronology of nerve supply discovery was presented and discussed. Increased innervation of the degenerating interverbal disc was presented and supported with contemporary scientific evidence. Spinal ligamentous structures as pain generating entities were also reviewed including anterior longitudinal ligament, posterior longitudinal ligament, supraspinous ligament, interspinous ligament and facet capsule. Clinical correlation to patient history, physical examination and imaging findings was emphasized with specific discussion on interprofessional triage and patient management. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University of Health Sciences, College of Chiropractic, Kansas City 2021

Clinical Grand Rounds – Diagnosis of Ossification of Anterior Longitudinal Ligament – discussion of the different types of Ossification of Anterior Longitudinal Ligament (OALL) including Segmental, Continuous and Mixed in the sagittal plane. Review of axial classification including Flat, Nodular and Globular was presented. Anatomy of spinal ligaments including the anterior and posterior longitudinal ligament and their attachments was outlined. Context of dysphagia, its progression, symptoms and need for referral was reviewed and outlined. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences – 2021.

Clinical Grand Rounds – Chiropractic Management of Chronic Spine Pain – Discussion of chronic spine pain as a Public Health issue and Chiropractic's role in its diagnosis and management. Epidemiological statistics of chronic pain sufferers consulting Doctors of Chiropractic in the United States was presented. Outline of a spinal function and preventative model as opposed to a curative process was presented and reviewed. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences – 2021.

Clinical Grand Rounds – Types of Annular Fissures on Advanced and Plain Film Imaging – detailed review of the structure and function of the human intervertebral disc was presented including annulus fibrosis, nucleus pulposus, cartilaginous endplate and sharpey's fibers. Diagrams as well as MRI images were outlined and reviewed in both the cervical and the lumbar spines with particular focus on the difference between degenerative and traumatically induced changes. High intensity zone (HIZ) as a characteristic of injury to the posterior aspect of the annulus fibrosis best visualized on T1 sagittal MRI images. Detailed comparison of axial and sagittal T1, T2 and STIR images was outlined, discussed, and reviewed. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences – 2021

Clinical Grand Rounds – *Prevalence of Spinal Degeneration* – discussion of the clinical occurrence of spinal degenerative conditions such as Diffuse Skeletal Hyperostosis (DISH), central stenosis, foraminal stenosis, degenerative disc disease and osteoporosis was presented. Advanced imaging and plain film radiological utilization in the diagnosis of spinal degermation was outlined and reviewed. Acute versus degenerative conditions in the spine were reviewed and detailed in relation to traumatic and non-traumatic events. Consensus driven parameters in the identification and rating of degenerative change severity was discussed. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences – 2021.

Clinical Grand Rounds – *Chiropractic Professional Liability Litigation* – Discussion of thirty years of jury verdict data was reviewed and presented. Focus was on the rationale for claims against Doctor of Chiropractic and overall decisions rendered by jury pools. Outlining the risk factors associated with overly aggressive treatment, failure to diagnose and lack of interprofessional referral when medical necessary was presented with statistics. Comparison between chiropractic management and surgical management were outlined and detailed. Detailed analysis of causality versus correlation was presented and discussed. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences – 2021

Clinical Grand Rounds – *Mechanical Response of Damaged Human Cervical Spine Ligaments* – discussion of the biomechanical properties of cervical spinal ligaments under sub-failure loads. Ligaments discussed were the Anterior Longitudinal Ligament, Posterior Longitudinal ligament and the Ligamentum Flavum. Deformations exceeding physiological limitations were presented and reviewed. Grade I and Grade II injuries were outlined and discussed. Presentation included observed ligamentous injury significantly compromising ligament ability to give tensile support within physiological spinal motion. Findings were clinically correlated to long term sequalae in Alteration of Motion Segment Integrity and the AMA Guides to the Evaluation of Permanent Impairment 5th and 6th Editions. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences – 2021.

Clinical Grand Rounds – *Classification of Degenerative Cervical Degenerative Disc Disease* – review of a radiographic rating system for objective assessment of intervertebral disc degeneration in the cervical spine. The degree of degeneration was organized based on loss of disc height, formation of osteophytes and the presence of diffuse sclerosis of adjacent vertebral bodies. Specific details of assessment were outlined and presented. Comparison of plain film radiographs to cadaver specimens was demonstrated and discussed. Review of interobserver validity of the grading system between observers was presented. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences – 2021.

Clinical Grand Rounds – *Differentiating Degenerative vs Traumatic Cervical Spondylolisthesis* – outline of spondylolisthesis clinical work up in the presence of spine pain including plain film dynamic radiographs, regional MRI study and assessment of alteration of motion segment integrity of specific spinal segments. Review of the correlation of present segmental degenerative changes such as loss of disc height, osteophyte formation, ligament ossification and facet joint hypertrophy and its association to pre-existing spondylosis was presented. Detailed discussion of past and present medical history including past traumatic events was emphasized. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences – 2021.

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

National Spine Conference – East Coast – 2021 Pain Management and the Chiropractic Adjustment

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

National Spine Conference – East Coast – 2021 Corrective Spinal Care and Chiropractic Case Management

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

National Spine Conference – East Coast – 2021 Health Maintenance Care and Chiropractic Case Management

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

National Spine Conference – East Coast – 2021 Evidence Based Clinical Reporting

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

National Spine Conference – East Coast – 2021 Cervical Spine Clinical Workflows

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

National Spine Conference – East Coast – 2021 Lumbar Spine Clinical Workflows

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

National Spine Conference – East Coast – 2021 Interprofessional Clinical Documentation for the Primary Care Physician

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

National Spine Conference – East Coast – 2021 Clinical Documentation for the Spine Surgeon

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

National Spine Conference – East Coast – 2021 Clinical Documentation for the Pain Management Physician

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

National Spine Conference – East Coast – 2021 Clinical Documentation for Attorney

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

National Spine Conference – East Coast – 2021 Spinal Biomechanical Engineering

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

National Spine Conference – East Coast – 2021 Objectifying the Biomechanical Spine

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

ACA Acupuncture Symposium

I Ching Acupuncture & Master Tung Extraordinary Acupuncture. Integration of the correspondence in meridian, time of the opposite channel, meridian clock, Shu points, Master Tung's Extraordinary points, 8 confluent points, Zang Fu connection, external meridian channel, and internal meridian channel. American Chiropractic Association, Council of Chiropractic Acupuncture, Painesville, OH. 2020.

Primary Spine Care 8-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.

Primary Spine Care 8-*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, Proprioreceptors 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.

Primary Spine Care 8-*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 finings 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.

Primary Spine Care 8-*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.

Primary Spine Care 8-Central Innervation of Spinal Biomechanical Engineering

Understanding the lateral and ventral horn's innovations of Pacinian Corpuscles, Ruffini Corpuscles, Golgi Organ Receptors, Nociceptors, Proprioreceptors 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 efferently back through the Thalamus to disparate regions in creating spinal homeostasis, Pacinian Corpuscles, Ruffini Corpuscles, Golgi Organ Receptors, Nociceptors, Proprioreceptors and Mechanoreceptors. Cleveland University Kansas City, Chiropractic and Health Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2019.

Primary Spine Care 8-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.

Medical-Legal Ethical Relationships, Documentation and Legal Testimony

Report writing for legal cases, the 4 corners of a narrative and documenting damages with understanding defense medical documentation and consistent reporting of bodily injuries, Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2018.

Medical-Legal Ethical Relationships, Documentation and Legal Testimony, Part 2

*Understanding report writing and the types of medical reports required for court inclusive of diagnosis, prognosis and treatment plans with requirements of reporting causality and permanency***,** Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2018.

Medical-Legal Ethical Relationships, Documentation and Direct Testimony

Organizing your documentation and understanding all collaborative documentation and how it fits into your diagnosis, prognosis and treatment plan, Understanding the nuances of the functional losses of your patients related to their bodily injuries, Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2018.

Medical-Legal Ethical Relationships, Documentation and Direct Testimony Part 2

Utilizing demonstrative documentation in direct examination and communicating the results of your care concurrently with the written documentation and reporting an accurate diagnosis for all images, Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2018.

Medical-Legal Ethical Relationships, Documentation and Direct Testimony Part 3
*The evaluation, interpretation and reporting of collaborative medical specialists results and concluding an accurate diagnosis inclusive of all findings and reviewing all images to ensure an accurate diagnosis***,** Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2018.

Medical-Legal Ethical Relationships, Documentation and Direct Testimony Part 4
*Determining and documenting disabilities and impairments inclusive of loss of enjoyment of life and duties under duress and the evaluation and validation of pain and suffering***,** Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2018.

Medical-Legal Ethical Relationships, Documentation and Cross Examination Testimony
Reporting your documentation factually and staying within the 4 corners of your medical report and scope of practice inclusive of understanding how your credentials allow you to report your documentation, Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2018.

Medical-Legal Ethical Relationships, A Documentation Relationship Between the Doctor and Lawyer
The level of organization required in a medical-legal case that accurately reflects the bodily injuries of your patients and the time constraints in rendering an accurate report, Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2018.

Medical-Legal Ethical Relationships, Report Writing and Preparing for a Legal Case
*Reviewing the facts of the case inclusive of your documentation, the defense medical examiner, medical specialists and the attorney to ensure accurate and consistent reporting***,** Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2018.

Medical-Legal Ethical Relationships, Report Writing and Preparing for a Legal Case
Creating demonstrative evidence, visuals of your patient's bodily injuries inclusive of x-rays, MRI's, CAT Scans and electrodiagnostic findings, the spinal biomechanics of herniated disc with ipsilateral findings and contralateral symptomatology, Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2018.

Primary Spine Care Qualified

This qualification includes graduate chiropractic education in healthy and traumatically altered spinal morphology inclusive of osseous, connective tissue and neurological structure, function and pathology. This certifies you are qualified in assessing predictive models in spinal biomechanics and devising engineering paradigms for treatment plans to maximize spinal homeostasis in an evidenced based conclusion. In addition, this qualification acknowledges your expertise in triaging the injured and coordinating collaborative care from the trauma through conclusion of rehabilitation, Academy of Chiropractic Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island NY, 2018.

Neuroradiology Mini-Fellowship

MRI Spine Interpretation, Robert Peyster MD, Neuroradiologist, Professor of Radiology and Neurology, Chief Division of Neuroradiology, State University of New York at Stony Brook, School of Medicine, PACE Recognized by The Federation of Chiropractic Licensing Boards, Stony Brook NY, 2018..

Primary Spine Care 1 - 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, Chiropractic and Health Sciences, PACE Recognized by The Federation of Chiropractic Licensing Boards,, Academy of Chiropractic Post - Doctoral Division, Setauket, NY, 2018.

Primary Spine Care 1- 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, Chiropractic and Health Sciences, PACE Recognized by The Federation of Chiropractic Licensing Boards,, Academy of Chiropractic Post -Doctoral Division, Setauket, NY, 2018.

Primary Spine Care 1- 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 protocol., Cleveland University Kansas City, Chiropractic and Health Sciences, PACE Recognized by The Federation of Chiropractic Licensing Boards,, Academy of Chiropractic Post -Doctoral Division, Setauket, NY, 2018.

Primary Spine Care 1- 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, Chiropractic and Health Sciences, PACE Recognized by The Federation of Chiropractic Licensing Boards,, Academy of Chiropractic Post -Doctoral Division, Setauket, NY, 2018.

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, Chiropractic and Health Sciences, PACE Recognized by The Federation of Chiropractic Licensing Boards,, Academy of Chiropractic Post -Doctoral Division, Setauket, NY, 2018.

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, Chiropractic and Health Sciences, PACE Recognized by The Federation of Chiropractic Licensing Boards,, Academy of Chiropractic Post -Doctoral Division Setauket, , NY, 2018.

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, Chiropractic and Health Sciences, PACE Recognized by The Federation of Chiropractic Licensing Boards,, Academy of Chiropractic Post -Doctoral Division, Setauket, NY, 2018.

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, Chiropractic and Health Sciences, PACE Recognized by The Federation of Chiropractic Licensing Boards,, Academy of Chiropractic Post -Doctoral Division, Setauket, NY, 2018

Primary Spine Care Symposium 3 – Interprofessional Spine Care, **Clinical Analysis of Anatomic versus Biomechanical Spine Pain and Clinical Triage Protocols**

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

Primary Spine Care Symposium 3 – Epidemiology of Spine Pain

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

Primary Spine Care Symposium 3- Connective Tissue and Spinal Disc Pathology

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

Primary Spine Care Symposium 3- Physiology and Anatomy of Spinal Manual Adjusting

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

Primary Spine Care Symposium 3- Medical-Legal Documentation

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

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. Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post -Doctoral Division, Long Island, NY, 2017

Diagnostics, Risk Factors, Clinical Presentation and Triaging the Trauma Patient

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

Crash Dynamics and Its Relationship to Causality

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

MRI, Bone Scan and X-Ray Protocols, Physiology and Indications for the Trauma Patient

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

Neurodiagnostics Testing: EMG/NCV, VEP, BAER, V-ENG and SSEP

Clinical Indications and Interpretation, 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. Certification in Neurodiagnostics Testing: EMG/NCV, VEP, BAER, V-ENG and SSEP, Clinical Indications and Interpretation. Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards, Academy of Chiropractic Post -Doctoral Division, Long Island, NY, 2017

Documentation and Reporting for the Trauma Victim

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

Documenting Clinically Correlated Bodily Injury to Causality

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

MRI History and Physics, MRI History and Physics

Magnetic fields, T1 and T2 relaxations, nuclear spins, phase encoding, spin echo, T1 and T2 contrast, magnetic properties of metals and the historical perspective of the creation of NMR and MRI. Texas Chiropractic College 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, Buffalo, NY, 2017

MRI Spinal Anatomy and Protocols

Normal anatomy of axial and sagittal views utilizing T1, T2, 3D gradient and STIR sequences of imaging. Standardized and desired protocols in views and sequencing of MRI examination to create an accurate diagnosis in MRI. 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, 2017

MRI Disc Pathology and Spinal Stenosis

MRI interpretation of bulged, herniated, protruded, extruded, sequestered and fragmented disc pathologies in etiology and neurological sequelae in relationship to the spinal cord and spinal nerve roots. 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, 2017

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. 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, 2017

MRI Methodology of Analysis

MRI interpretation sequencing of the cervical, thoracic and lumbar spine inclusive of T1, T2, STIR and 3D gradient studies to ensure the accurate diagnosis of the region visualized. Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards, New York Chiropractic Council, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2017

MRI Clinical Application

The clinical application of the results of space occupying lesions. Disc and tumor pathologies and the clinical indications of manual and adjustive therapies in the patient with spinal nerve root and spinal cord insult as sequelae. Texas Chiropractic College 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, Buffalo, NY, 2017

MRI Disc Overview & Imaging Protocols

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. 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, 2017

MRI Interpretation of Lumbar Bulges/Degenerative Disc Disease

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. 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, 2017

MRI Interpretation of Lumbar Herniated Discs

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-morbities 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. 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, 2017

MRI Interpretation of Cervical Bulges/Degenerative Disc Disease

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. 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, 2017

MRI Interpretation of Cervical Herniated Discs

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. 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, 2017

Virtual Grand Rounds

MRI Interpretation of Degenerative Spine and Disc Disease with Overlapping Traumatic Insult to Both Spine and Disc, MRI slices, views, T1, T2, STIR Axial, FFE, FSE and sagittal images in the interpretation of degenerative spondylolesthesis, spinal canal stenosis, Modic type 3 changes, central herniations, extrusions, compressions, nerve root compressions, advanced spurring and thecal sac involvement from an orthopedic, emergency room, chiropractic, neurological, neurosurgical, physical medicine perspective. Texas Chiropractic College 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, 2017.

Spinal Biomechanical Engineering: Cartesian System

The Cartesian Coordinate System from the history to the application in the human body. Explanation of the x, y and z axes in both translation and rotations (thetas) and how they are applicable to human biomechanics. Diplomate, Academy of Chiropractic Post -Doctoral Division, 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, 2017, Buffalo, NY, 2017

Spinal Biomechanical Engineering: Cervical Pathobiomechanics

Spinal biomechanical engineering of the cervical and upper thoracic spine. This includes the normal and pathobiomechanical movement of both the anterior and posterior motor units and normal function and relationship of the intrinsic musculature to those motor units. Nomenclature in reporting normal and pathobiomechanical findings of the spine. Diplomate, Academy of Chiropractic Post -Doctoral Division, 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, 2017, Buffalo, NY, 2017

Spinal Biomechanical Engineering: Lumbar Pathobiomechanics

Spinal biomechanical engineering of the lumbar spine. This includes the normal and pathobiomechanical movement of both the anterior and posterior motor units and normal function and relationship of the intrinsic musculature to those motor units. Nomenclature in reporting normal and pathobiomechanical findings of the spine. Diplomate, Academy of Chiropractic Post -Doctoral Division, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2017, Buffalo, NY, 2017

Spinal Biomechanics in Trauma

To utilize whiplash associated disorders in various vectors of impact and whiplash mechanisms in determining pathobiomechanics. To clinically correlate annular tears, disc herniations, fractures, ligament pathology and spinal segmental instability as 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. Diplomate, Academy of Chiropractic Post -Doctoral Division, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2017, Buffalo, NY, 2017

Spinal Biomechanical Engineering & Organizational Analysis

Integrating spinal biomechanics and pathobiomechanics through digitized analysis. The comparison of organized versus disorganized compensation with regional and global compensation. Correlation of the vestibular, occular and proprioceptive neurological integration in the righting reflex as evidenced in imaging. Digital and numerical algorithm in analyzing a spine. Diplomate, Academy of Chiropractic Post -Doctoral Division, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2017, Buffalo, NY, 2017

Spinal Biomechanical Engineering: Cervical Digital Analysis

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

Spinal 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. Diplomate, Academy of Chiropractic Post -Doctoral Division, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2017, Buffalo, NY, 2017

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. Diplomate, Academy of Chiropractic Post -Doctoral Division, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2017

Spinal Trauma Pathology, Triage and Connective Tissue Injuries and Wound Repair

Triaging the injured and differentially diagnosing both the primary and secondary complaints. Connective tissue injuries and wound repair morphology focusing on the aberrant tissue replacement and permanency prognosis potential. Diplomate, Academy of Chiropractic Post - Doctoral Division, Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards, Buffalo, NY, 2017

Spinal Trauma Pathology: Ligament Anatomy and Injury Research and Spinal Kinematics

Spinal ligamentous anatomy and research focusing on wound repair, future negative sequelae of abnormal tissue replacement and the resultant aberrant kinematics and spinal biomechanics of the spine. Diplomate, Academy of Chiropractic Post -Doctoral Division, 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, 2017, Buffalo, NY, 2017.

Spinal Trauma Pathology: Spinal Biomechanics, Central Nervous System and Spinal Disc Nomenclature

The application of spinal biomechanical engineering models in trauma and the negative sequelae it has on the central nervous system inclusive of the lateral horn, periaqueductal gray matter, thalamus and cortices involvement. Diplomate, Academy of Chiropractic Post -Doctoral Division, 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, 2017, Buffalo, NY, 2017

Spinal Trauma Pathology: Biomechanics of Traumatic Disc Bulge and Age Dating Herniated Disc Pathology

The biomechanics of traumatic disc bulges as sequella from trauma and the comorbidity of ligamentous pathology. Age-dating spinal disc pathology in accordance with Wolff's Law. Diplomate, Academy of Chiropractic Post -Doctoral Division, 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, 2017, Buffalo, NY, 2017

Spinal Trauma Pathology: Clinical Grand Rounds

The review of case histories of mechanical spine pathology and biomechanical failures inclusive of case histories, clinical findings and x-ray and advanced imaging studies. Assessing comorbidities in the triage and prognosis of the injured. Diplomate, Academy of Chiropractic Post -Doctoral Division, 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, 2017, Buffalo, NY, 2017

Spinal Trauma Pathology: Research Perspectives

The review of current literature standards in spinal trauma pathology and documentation review of biomechanical failure, ligamentous failure and age-dating disc pathology. Diplomate, Academy of Chiropractic Post -Doctoral Division, 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, 2017, Buffalo, NY, 2017

Accident Reconstruction: Terms, Concepts and Definitions

The forces in physics that prevail in accidents to cause bodily injury. Quantifying the force coefficients of vehicle mass and force vectors that can be translated to the occupant and subsequently cause serious injury. Diplomate, Academy of Chiropractic Post -Doctoral Division, 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, 2017, Buffalo, NY, 2017

Accident Reconstruction: Causality, Bodily Injury, Negative Acceleration Forces, Crumple Zones and Critical Documentation

Factors that cause negative acceleration to zero and the subsequent forces created for the vehicle that get translated to the occupant. Understanding critical documentation of hospitals, ambulance reports, doctors and the legal profession in reconstructing an accident. Diplomate, Academy of Chiropractic Post -Doctoral Division, 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, 2017, Buffalo, NY, 2017

Accident Reconstruction: Skid Marks, Time, Distance, Velocity, Speed Formulas and Road Surfaces

The mathematical calculations necessary utilizing time, distance, speed, coefficients of friction and acceleration in reconstructing an accident. The application of the critical documentation acquired from an accident site. Diplomate, Academy of Chiropractic Post -Doctoral Division, 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, 2017, Buffalo, NY, 2017

Accident Reconstruction: Research, Causality and Bodily Injury

Delta V issues correlated to injury and mortality, side impact crashes and severity of injuries, event data recorder reports correlated to injury, frontal impact kinematics, crash injury metrics with many variables and inquiries related to head restraints. Diplomate, Academy of Chiropractic Post -Doctoral Division, 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, 2017, Buffalo, NY, 2017

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. Diplomate, Academy of Chiropractic Post -Doctoral Division, 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, 2017, Buffalo, NY, 2017

Impairment Rating

The understanding and utilization of the protocols and parameters of the AMA Guide to the Evaluation of Permanent Impairment 6th Edition. Spine, neurological sequelae, migraine, sexual dysfunction, sleep and arousal disorders, station and gait disorders and consciousness are detailed for impairment rating. Herniated discs, radiculopathy, fracture, dislocation and functional loss are also detailed in relation to impairment ratings. Diplomate, Academy of Chiropractic Post -Doctoral Division, 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, 2017, Buffalo, NY, 2017

Orthopedic Testing: Principles, Clinical Application and Triage

Integration of orthopedic testing in the clinical setting to develop a differential diagnosis. Utilizing radiographic and advanced imaging inclusive of MRI and CAT scan findings to verify tissue pathology suspected by orthopedic testing conclusions and developing a treatment plan as sequelae. Diplomate, Academy of Chiropractic Post -Doctoral Division, 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, 2017, Buffalo, NY, 2017.

Orthopedic Testing: Cervical Spine

Integration of cervical orthopedic testing in the clinical setting to develop a differential diagnosis. Utilizing radiographic and advanced imaging inclusive of MRI and CAT scan findings to verify tissue pathology suspected by orthopedic testing conclusions and developing a treatment plan as sequelae. Diplomate, Academy of Chiropractic Post -Doctoral Division, 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, 2017, Buffalo, NY, 2017

Orthopedic Testing: Lumbar Spine

Integration of lumbar orthopedic testing in the clinical setting to develop a differential diagnosis. Utilizing radiographic and advanced imaging inclusive of MRI and CAT scan findings to verify tissue pathology suspected by orthopedic testing conclusions and developing a treatment plan as sequelae. Diplomate, Academy of Chiropractic Post -Doctoral Division, 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, 2017, Buffalo, NY, 2017.

Orthopedic Testing: Clinical Grand Rounds

Integration of orthopedic testing in the clinical setting utilizing both simple and complex patient scenarios. It includes potential stroke, or vertebrobasilar insufficient patients and understanding the nuances in a clinical evaluation with orthopedic testing as a critical part of the evaluation and screening process. How to integrate orthopedic testing in the clinical setting utilizing both simple and complex patient scenarios. It includes potential stroke, or vertebrobasilar insufficient patients and understanding the nuances in a clinical evaluation with orthopedic testing as a critical part of the evaluation and screening process. Diplomate, Academy of Chiropractic Post - Doctoral Division, 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, 2017, Buffalo, NY, 2017

Stroke Anatomy and Physiology: Brain Vascular Anatomy

The anatomy and physiology of the brain and how blood perfusion effects brain function. A detailed analysis of the blood supply to the brain and the physiology of ischemia. Diplomate, Academy of Chiropractic Post -Doctoral Division, 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, 2017, Buffalo, NY, 2017

Stroke Anatomy and Physiology: Stroke Types and Blood Flow

Various types of stroke identifying ischemia, hypoperfusion, infarct and penumbra zones and emboli. Cardiac etiologies and clinical features as precursor to stroke with associated paradoxical emboli and thrombotic etiologies. Historical and co-morbidities that have etiology instroke inclusive of diabetes, coagulopathy, acquired and hereditary deficiencies. Diplomate, Academy of Chiropractic Post -Doctoral Division, 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, 2017, Buffalo, NY, 2017

Stroke Principles of Treatment an Overview for the Primary Care Provider

Stroke type and treatments performed by vascular specialists. The goals of treatment with the physiology of the infarct and penumbra zones and the role of immediate triage in the primary care setting. Detailing the complications of stroke and future care in the chiropractic, primary care or manual medicine clinical setting. Diplomate, Academy of Chiropractic Post -Doctoral Division, 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, 2017, Buffalo, NY, 2017

Clinical Evaluation and Protocols for Identifying Stroke Risk

The neurological history and examination for identifying stroke risks with a focus on supra and infratentorial regions, upper and lower motor lesions, cranial nerve signs, spinal cord pathology, motor and sensory pathology and gait abnormalities. Examining genetic and family histories along with dissection risk factors. Stroke orthopedic testing and clinical guidelines pertaining to triage for the primary care provider. Diplomate, Academy of Chiropractic Post -Doctoral Division, 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, 2017, Buffalo, NY, 2017

Medical-Legal-Insurance Documentation

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

Croft Module 1: Whiplash Advanced Topics: The Fundamental Science

Requisite and comprehensive biomechanics knowledge for forensic experts, the minimal property damage myth exposed. A cutting-edge analysis of brain, neck, and other soft tissue injuries that occur secondary to cervical acceleration deceleration syndrome and whiplash associated disorder. Risk assessment: the fundamental key to modern forensic practice. Certification in Whiplash and Brain Injury Traumatology, Spine Research Institute of San Diego, Denver Colorado 2016.

Croft Module 2: Management Principles in Personal Injury and Forensic Documentation
Auto crash reconstruction in low speed crashes: critical knowledge for today's forensic practitioners. Comprehensive physical examination of whiplash and traumatic brain injury cases and the correct way to document these injuries. The latest radiographic examination methods and analysis techniques. CT and MRI examination of brain and soft tissue injuries. How and when to use special diagnostic imaging modalities (SPECT, PET, functional MRI, VF, etc.) How and when to use electrodiagnostics (EMG, sEMG, SSEP, VEP, etc.) Special considerations for the proper management of personal injury cases. Certification in Whiplash and Brain Injury Traumatology, Spine Research Institute of San Diego, Denver Colorado 2016.

Croft Module 3: Principles of Impairment Rating and Forensic Reporting
Critical documentation from day 1; What every personal injury and forensic expert needs to know. Incorporating outcomes assessment and disability instruments into your reports (SCL-90-R. Oswestry, Roland-Morris, Rivermead PCS, and more). The application of AMA guidelines in personal injury and forensic practice. Critical rebuttal methods and strategies in today's modern forensic practice. Certification in Whiplash and Brain Traumatology, Spine Research Institute of San Diego, 2017

Croft Module 4: Medicolegal Fundamentals for Practitioners and Forensic Experts
Essentials of documentation and record keeping in medicolegal cases. When and how to incorporate medical photography. Preparing for depositions arbitrations, cross-examination and testifying in court. Critical differences between chiropractic and medical approaches that make or break a case. Using evidence effectively; models, charts, diagrams, photos, movies, and more. Daubert and Frey rules; how they affect your testimony and how they can exclude opposing experts. Disabusing the MIST myth; Colossus. Learned treatises and reliable authorities; other federal rules of evidence experts should know. Certification in Whiplash and Brain Traumatology, Spine Research Institute of San Diego, 2016

Experience

March 2004 – Present **Choice of Health Chiropractic & Acupuncture (Overland Park, KS)**
Owner and President of Choice of Health Chiropractic & Acupuncture. Solo practitioner, using techniques of Prone Specific, Diversified, Extremity Adjusting and Activator. Providing therapies such as intersegmental traction, manual massage, rehabilitation, trigger point therapy and acupuncture. Proficient in taking and reading onsite digital w-ray. Use of DME includes: Cervical supports, cervical pillows, lumbar supports, tens units, lumbar chair support and other rehab devices. This is a family practice with emphasis on motor vehicle collision injury treatment. Conditions most commonly treated include: motor vehicle collision injuries, asthma, allergies, migraines, headaches, sinus problems, neck and back pain, sciatica, infertility, infant child care, sports injuries, and geriatrics.

2000 – 2004 Internship at the Acupuncture Society of America (Kansas City, Mo)
Assisted Instructors with necessary materials for teaching beginning and advanced acupuncture curriculum. Apprenticed under Dr. Richard D. Yennie for acupuncture instructor. Set up classrooms and prepared materials for enrolled students. Collected payments for classes and any books and supplies. Assisted students with questions regarding course instruction.

2008- 2013 Assistant Instructor at the Acupuncture Society of America (Kansas City, Mo.)

2013- 2015 Head Instructor at the Acupuncture Society of America (Kansas City, Mo.)

2015- Present Guest Instructor at the American Society of Acupuncture (Overland Park, Ks.)

Publications

Witt Sherman PhD, APRN, ANP-BC, ACHPN, FAAN, D., Matzo PhD, APRN-CNP, FPCN, FAAN, M. (2018). Palliative Care Nursing, 5th Edition. Chapter (24), 67 - 65.

Professional Affiliations

American Chiropractic Association (ACA)
Kansas Chiropractic Association (KCA)
Missouri State Chiropractic Association (MSCA)
Cleveland Chiropractic College Lifetime Alumni Membership
American board of chiropractic Acupuncture
Council of Chiropractic Acupuncture