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#### **SELECTED OCCUPATIONAL HISTORY**

Owner, Hayden Island Chiropractic Portland Oregon, 2017 – Present  
Staff Chiropractor, Atlas Spinal Care, Vancouver, Washington, 2015 – 2017

#### **EDUCATION AND LICENSURE**

Doctor of Chiropractic, licensed in the State of Oregon, License # 5849, 2017 – Present  
Doctor of Chiropractic, Palmer College of Chiropractic, Davenport, IA, 2015  
National Board of Chiropractic Examiners, Physiotherapy, 2014  
National Board of Chiropractic Examiners, Part IV, 2014  
National Board of Chiropractic Examiners, Part III, 2014  
National Board of Chiropractic Examiners, Part II, 2014  
National Board of Chiropractic Examiners, Part I, 2014  
Intern Preceptorship Program, The Sweat Institute for Atlas Orthogonal Chiropractic, Palmer College of Chiropractic, Atlanta, GA, 2014-2015  
Bachelor of Arts in Psychology, Greenville College, Greenville, IL 1977

#### **CERTIFICATIONS, QUALIFICATIONS AND DIPLOMATES**

Trauma Team Qualified, Academy of Chiropractic 2019 - Present  
Primary Spine Qualified, Academy of Chiropractic 2019 - Present  
Certification in Laser Therapy Operation & Application, Erchonia Corporation, Melbourne, FL, 2017 – 2018  
Certification in Obstetrics, Gynecology & Genitourinary, Oregon Board of Chiropractic Examiners, Salem, OR, 2017  
Certification in Minor Surgery and Proctology, Oregon Board of Chiropractic Examiners, Salem, OR, 2017  
Certification in Advanced Technique, Activator Methods, Phoenix AZ, 2015  
Board Certification in Atlas Orthogonal Procedures, Sherman College, Spartanburg, SC, 2015

**SELECTED POST-GRADUATE EDUCATION** Interprofessional Spine Management Grand Rounds –**Acute and Chronic Spinal Injury Superimposed on One Another**-This course provided healthcare providers with advanced imaging interpretation skills to differentiate traumatic from degenerative spinal injuries, particularly in motor vehicle collision cases. Participants developed expertise in utilizing imaging biomarkers, such as Modic changes and STIR sequences, to assess acute and chronic spinal pathology. The curriculum covered key distinctions between traumatic disc herniations and degenerative disc bulges, emphasizing the role of inflammation and tissue morphology in diagnostic accuracy. Clinicians gained proficiency in causation analysis by integrating imaging findings with clinical presentations, enhancing their ability to support injury claims with objective evidence. The course also included case-based learning to apply these principles in real-world scenarios. Completion of this program demonstrated a provider's commitment to evidence-based spinal injury assessment and improved patient outcomes through precise diagnostic differentiation. National Spine Management Group 2025, Federation of Chiropractic Licensing Boards, PACE Program February 4, 2025.

**Spine Management Grand Rounds Internet Live and recorded Regularly Scheduled Series – Reading MRIs** - a standardized approach – in-depth review of the basic methods used to read an MRI study of the cervical and lumbar spines. This basic systematic approach covers the ABCDEs of MRI interpretation which includes Alignment, Bony anatomy, spinal Cord, intervertebral Disc and Everything else. Additional focus was given to the spinal ligamentous structures including ligamentum flavum, interspinous ligament, supraspinous ligament and facet capsule. Detailed review of the T1, T2 and STIR sagittal and axial views was presented. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE – July 9, 2024

Grand Rounds – **Chiropractic Management – Multiple Spine Injuries** – analysis of patients presenting with multiple spinal injuries post trauma was presented. Overview of ligamentous, intervertebral disc and cartilage injuries was reviewed. Discussion of clinical symptoms and correlation to objectified injury was discussed. Interprofessional collaboration with emphasis on clinical indications for the chiropractic adjustment, need for medical specialist referral, necessity of advanced imaging modalities such as MRI/CT and course of care was outlined and reviewed. Hallmark signs of ligamentous injury such as mid-line tenderness was detailed. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences – January 17, 2023

**Chiropractic Management Post C2-3 Fusion** – *detailed review of upper cervical anatomy and spinal biomechanics was reviewed. Specific attention to upper cervical ligamentous attachments and histological descriptions was given. Review of clinical indicators for upper cervical spine fusion and predominant patient population was outlined. Emphasis was placed on concomitant diagnosis of structural and biomechanical sources of spine pain. Interprofessional communication pathways were reviewed. Evidence based approach to post-surgical care was presented focused on physician experience, published literature and patient response. Outline of a systemized approach to the diagnosis and management of the patient with post-surgical upper cervical fusion was presented and discussed.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences, Office of Continuing Medical Education– 2023

**Grand Rounds – Chiropractic Management – Spinal Ligament Injury** – review and detailed presentation of the frequency of traumatic ligament injuries in the cervical spine was outlined. Imaging modalities such as dynamic plain film radiographs and MRI were discussed with emphasis on stability and presence of acute injuries. Threshold for medical specialty referral was presented within the context of conservative vs surgical management. Outline of patient presentation, physical examination findings including orthopedic and neurological findings was presented. Application of AMA Guidelines to the rating of injury severity using both the 5th and 6th edition of the Guides to the Evaluation of Permanent Impairment was reviewed. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences – January 10, 2023

**National Spine Management Conference South – Role of a Spine Management Physician** - Outline and overview of what a Spine Management Physician is, and the present day need in healthcare. Details relating to the Doctor of Chiropractic filling that role with specific discussion related to WHY physical therapy, nurse practitioners or physician assistants are unable to fill this position. Overview of a spine manager's role in the evaluation and triage of non-operative spine patients was presented. Introduction to the diagnosis of non-specific spine pain was outlined with focus on the needs of primary care, pain management and spinal surgeons. National Spine Management Group, LLC, Parker University, Alabama State Board of Chiropractic Examiners, Kentucky Board of Chiropractic, Louisiana State Board of Chiropractic Examiners, Texas Board of Chiropractic Examiners, Florida Board of Chiropractic Medicine, Arizona Board of Chiropractic Examiners, Federation of Chiropractic Licensing Boards – PACE, 2023.

**National Spine Management Conference South – Moving From a Curative Model of Spine Care** - A comprehensive look at the history of spinal care, degenerative changes and both regional and global spinal compensation. Outline the spine as a whole organ system that must be monitored in relation to physical activity, lifestyle, and traumatic patient history was discussed and presented. Application of spine management principles mirroring internal medicine disorders was presented and reviewed. Specific peer reviewed medically index research was presented outlining initial criteria for determining medical necessity of supportive spine care. National Spine Management Group, LLC, Parker University, Alabama State Board of Chiropractic Examiners, Kentucky Board of Chiropractic, Louisiana State Board of Chiropractic Examiners, Texas Board of Chiropractic Examiners, Florida Board of Chiropractic Medicine, Arizona Board of Chiropractic Examiners, Federation of Chiropractic Licensing Boards – PACE, 2023.

**National Spine Management Conference South – Interprofessional Communication with Primary Care Physicians** - Research trends and working with primary care physicians was outlined. Focus on the conservative management of spinal conditions, aiding the primary care clinic and working to prevent unnecessary escalation of care. Reduction in opioid utilization and reduced surgery trends will be discussed. Research documenting modulation of pain at the central nervous system level with the chiropractic adjustment was presented. Application to real world scenarios including evaluation and management documentation was reviewed. Details of effective communication were presented including phone call, email, fax, and text messaging within the HIPAA compliance environment was discussed. National Spine Management Group, LLC, Parker University, Alabama State Board of Chiropractic Examiners, Kentucky Board of Chiropractic, Louisiana State Board of Chiropractic Examiners, Texas Board of Chiropractic Examiners, Florida Board of Chiropractic Medicine, Arizona Board of Chiropractic Examiners, Federation of Chiropractic Licensing Boards – PACE, 2023.

**National Spine Management Conference South – Interprofessional Communication with Pain**

**Management Physicians** - *Chiropractic diagnosis of spinal ligament pathology will be discussed in the context of co-management with pain management specialists. Specific review of the role of a fellowship trained interventional pain management physician in your community will be presented. Review of epidural steroid injection, medial branch block and spinal ablation will be presented in the context of when and how to refer.* National Spine Management Group, LLC, Parker University, Alabama State Board of Chiropractic Examiners, Kentucky Board of Chiropractic, Louisiana State Board of Chiropractic Examiners, Texas Board of Chiropractic Examiners, Florida Board of Chiropractic Medicine, Arizona Board of Chiropractic Examiners, Federation of Chiropractic Licensing Boards – PACE, 2023.

**National Spine Management Conference South – Interprofessional Communication with the Spine**

**Surgeon** - *Spinal sagittal balance and spine surgery research trends will be reviewed. Chiropractic's role in the conservative management of spinal biomechanics pre-surgery and post-surgery will be outlined. Terminology and documentation requirements will be presented.* National Spine Management Group, LLC, Parker University, Alabama State Board of Chiropractic Examiners, Kentucky Board of Chiropractic, Louisiana State Board of Chiropractic Examiners, Texas Board of Chiropractic Examiners, Florida Board of Chiropractic Medicine, Arizona Board of Chiropractic Examiners, Federation of Chiropractic Licensing Boards – PACE, 2023.

**National Spine Management Conference South – Anatomy and Physiology of the Healthy**

**Intervertebral Disc** - *Anatomy of the healthy intervertebral disc and its nerve supply will be reviewed. A brief overview of the biochemical structure of the intervertebral disc will be presented. The role of the intervertebral disc as a spinal stabilizer and its influence on facet joint function will be outlined. Specific attention will be given to radiologic vocabulary such as intervertebral disc herniation, extrusion, sequestration, and traumatic annular tears. MRI samples will be provided demonstrating. 2023*

**National Spine Management Conference South – Anatomy and Physiology of the Degenerated**

**Intervertebral Disc** - *Anatomy of the degenerative intervertebral disc and its nerve supply will be reviewed. An overview of the biochemical process of intervertebral disc degeneration will be outlined. Specific attention will be given to the Pfirrmann Scale and radiographic terms such as desiccation, intervertebral disc bulge and degenerative annular tears. 2023*

**National Spine Management Conference South – Spinal Ligament Histological Structure and Function -**

*Histology of ligament structure and function will be presented. Microanatomy and the wound repair process will be discussed. Structural deficits post ligament injury will be presented and reviewed. anatomical positioning of ligamentous structures will be outlined with specific attention to the spinal enthesis and the difference between an enthesophyte and osteophyte in spinal degeneration. 2023*

**National Spine Management Conference South – Spinal Ligament Traumatic Pathology -**

*Ligament pathology as a source of persistent spinal pain and dysfunction will be outlined and reviewed. Objectifying ligament injury will be presented, and context will be provided using plain film radiographs and MRI examples. Focus on facet capsules and interspinous ligament will be central to the discussion 2023.*

**National Spine Management Conference South – Compliance and Documentation** - *Review of federal documentation guidelines with specific focus on CPT coding for initial and re-evaluation visits. Detailed outcomes of documentation audits by insurance carriers, regulator and special investigators will be presented in a case study format. Emphasis will be placed interprofessional communication and compliance. 2023*

**National Spine Management Conference South – Trends in Chiropractic Research** - *Review and discussion of 2022/2023 research supporting the chiropractic profession and the doctor of chiropractor as a spine care manager. Specific papers will be presented related to the pain management, corrective, and health maintenance phases of chiropractic care. Overview of current and future research trends will be demonstrated. 2023*

National Spine Management West Conference 2022 – **Communicating with the Spine Surgeon**, *Detailed review of the scientific literature supporting interprofessional collaboration between the spine surgeon and the Doctor of Chiropractic was presented. Emphasis on updated needs of the spine surgeon with focus on the understanding of pre and post-surgical chiropractic care. Literature updates and documentation requirements were discussed. Specific talking points are provided for telecommunication with the spine surgeon.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, Lehi, UT, 2022

National Spine Management West Conference 2022 – **Communicating with the Pain Management Physician**, *Review of the scientific literature supporting interprofessional collaboration with the interventional pain management physician was outlined. Updates and review of the chiropractic scientific literature in relation to pain management mechanisms of the chiropractic adjustment were presented. Documentation and interprofessional referral, communication and telecommunication talking points for daily practice was outlined.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, Lehi, UT, 2022

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

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

**National Spine Management West Conference 2022 - Interprofessional referral and pathways**, *Review and outline of complete workflows for patient evaluation, documentation and triage when clinically*

*indicated were detailed. Efficiency and accuracy of interprofessional communication was presented in terms of the needs of the patient, pain management physician, spine surgeon, physical therapist, and primary care physician. Evidence based triage workflows were discussed and detailed with emphasis on preventing unnecessary escalation of care in spine pain patients was presented. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, Lehi, UT, 2022*

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

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

**National Spine Management West Conference 2022 – Communicating with the Lawyer – Low Speed Collisions,** *Discussion of the medical-legal implications of injuries sustained because of a low speed/impact collision resulting in minimal property damage was outlined. Clinical correlation to the low-speed mechanism of injury, objective physical examination findings, results of advanced imaging and persistent functional loss was reviewed. Medical legal discussion related to the correlation between impact forces and human spinal tolerance with particular attention being given to pre-existing degenerative spinal conditions was presented. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, Lehi, UT, 2022*

**National Spine Management West Conference 2022 – Anatomy of a Narrative Report** – *departing from gimmicks, Presentation on the flow of clinical information into the medical-legal format used by adjusters, attorneys, judges, jurors, and law clerks was provided. Key indicators of persistent functional loss such as physical examination findings, global and segmental range of motion, advanced imaging findings and results of electrodiagnostic testing were outlined. Direct discussion on where in a narrative report these findings are to be written with an emphasis on patient assessment and expert opinion. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, Lehi, UT, 2022*

**National Spine Management West Conference 2022 – Advanced Imaging Protocols** – *update of the science of MRI, Detailed review of common MRI sequences for spine imaging will be presented including T1, T2 and STIR in the sagittal and axial planes was presented. Additional sequences such as Proton Density, Diffusion Weighted and Dixon was detailed and reviewed. Particular attention was given to*

*ordering contrast medium in a spine care practice. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, Lehi, UT, 2022*

**National Spine Management West Conference 2022 – Spine Care Leadership – educating the medical community,** *Overview of spine care leadership and the processes of creating an Evidence-Based, Patient Centered reputation in your community was discussed. Focus on structuring a medical community outreach program, what topics to include and the process of building support was detailed. This section outlined the differences between the various stakeholders in the medical community including nurses, physician assistants, physicians, and administrative support staff was discussed. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, Cleveland University Kansas City College of Chiropractic, Lehi, UT, 2022*

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

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

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

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

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

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

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

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

**Clinical Grand Rounds – Chiropractic Management of Upper Extremity Neurologic Deficits and Pre-existing Intervertebral Disc Pathology,** *Review of objectification of urological deficits including loss of sensation, aberrant deep tendon reflexes, loss of strength and the presence of Pathological reflexes was presented and discussed. Criteria for co-management in the presence of neurological deficits with the pain management physician and the spine surgeon was outlined. Detailed presentation on CPT coding and E/M documentation requires was discussed and reviewed. Absolute and relative contraindications to chiropractic care was demonstrated and outlined.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences, Buffalo, NY, 2022

**Clinical Grand Rounds – Chiropractic Management of a L5-S1 Lumbar Disc Extrusion,** *Review of objective muscle weakness as the primary indication for surgical interventions in patients with intervertebral disc herniations and extrusions was presented. Discussion of parameters for physical examination findings to warrant ordering advanced imaging and surgical consultation. Overview of*



*rationale for evaluation of spinal central canal in patients with abnormal neurological findings were reviewed. Duties of a Spine Management Physician in the diagnosis and co-management of patients with intervertebral disc extrusions was outlined. Clinical correlation and coordination of care was detailed including timing of advanced imaging order and surgical referrals. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences, Buffalo, NY, 2022*

**BLS (Basic Life Support) Course, Healthcare Provider CPR/AED for Adult, Infant and Child, Standard First Aid Course.** American Healthcare Academy, Coppell, TX, 2022

**Clinical Grand Rounds – Chiropractic Spine Management – Role of Diagnostic Injections in Spinal Disorders,** *Review and discussion of objective data derived from ordering diagnostic spinal injections. Patient triage in relation to facet joint injury, ligament laxity, radiculopathy, herniation of the intervertebral disc and sacroiliitis was outlined. Patient injury data from physical examination, provocative testing and diagnostic imaging was correlated clinically with response to diagnostic block after appropriate referral to medical specialty. The sacroiliac joint as an underdiagnosed source of chronic lower back pain was outlined. Review of gold standard for diagnosis of sacroiliitis, fluoroscopy-guided block was presented. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences, Buffalo, NY, 2022*

**Advanced Orthogonal Institute – Boot Camp, 36 Hours of training on all aspects of the Advanced Orthogonal Technique, including Chiropractic Philosophy, Adjusting Technique, Neurology and Physiology, and Diagnostic Imaging for the technique.** Continuing Education Department of Sherman College of Chiropractic, Spartanburg SC, with coursework at the Pierce Clinic of Chiropractic, St. Petersburg, FL, 2022

**Clinical Grand Rounds – Chiropractic Spine Management and Pain Categorization,** *Review of published categorization of pain generation by the International Association for the Study of Pain including nociceptive, neuropathic and nociplastic sources. Discussion on the history and relevance of the Delphi process of conducting consensus-based research was presented. Origins of nociceptive, neuropathy and nociplastic sources of pain was outlined including non-neural tissue, the somatosensory nervous system as well as the categorization of pain syndromes with non-specific findings on physical examination and imaging studies. Review of the importance of quantitative testing, clinical examination and clinical correlation was presented and related to the academic approach to the categorization of pain. Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2022*

**Clinical Grand Rounds – Atlanto-Axial Pannus with and without Rheumatoid Arthritis,** *Detailed overview of the anatomy and mechanics of the Atlanto-axial space in both diagrams and MRI studies. Overview of the clinical and laboratory diagnosis of rheumatoid arthritis and MRI as the imaging modality of choice for pannus formation in the upper cervical spine. Discussion on pannus formation being more common in non-rheumatoid arthritis patients. Overview of theories relating pannus formation to spinal instability at the C1-2 joint and identification of pannus as a common trait in the elderly. Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2022*

**Clinical Grand Rounds - *Chiropractic Management and the Carotid Space***, Outline and discussion of the anatomical boundaries of the carotid space was presented. Review of the aortic arch, brachiocephalic trunk, common carotid, carotid bifurcation, internal carotid, external carotid, Circle of Willis, and vertebral artery pathways was demonstrated. Review of correlation of patient history, physical examination and findings on advanced imaging was presented. Clinical review of dysphagia and odynophagia were presented and discussed clinically in the context of the physical examination and patient pain patterns. Vascular anomalies and their general asymptomatic presentation were emphasized. Etiology of arterial dissections was outlined with emphasis on differentiating spontaneous versus traumatic characterization. Advanced imaging of carotid space pathology was presented with catheter angiography demonstrated as the gold standard. Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences, Buffalo, NY, 2022

**Clinical Grand Rounds - *Diagnosis and Management of Persistent Spine Pain***, Overview and discussion of spinal anatomy including intervertebral discs, ligaments, spinal nerves, spinal cord, and facet capsule was presented. Emphasis was placed on differential diagnosis, physical examination and clinical correlation of injury mechanism and patient complaint. Specific outline of facet joint injury and joint effusion was demonstrated and discussed using T1, T2 and STIR weighted MRI scans of the lumbar spine with specific attention paid to the right L3 facet joint. Interprofessional communication in documentation and referral for interventional pain management consulting was presented with emphasis on facet or medial branch block injections. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2022

**Clinical Grand Rounds - *Spinal Biomechanical Engineering and Sagittal Balance of the Spine***, Discussion of spine care in terms of engineering principles was presented. Biomechanical parameters such as pelvic incidence, sacral slope, pelvic tilt, and sagittal balance were outlined and presented. Spinal curvature and load distribution was presented mathematically and outlined using full spine plain film radiography. Comparative anatomy between primates and humans as well as humans of different ages was presented as examples of spinal compensation. Spinal rehabilitative principles was provided in group discussion. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences, Buffalo, NY, 2022

**Clinical Grand Rounds - *Diagnosis and Management of Synovial Cyst of the Spine***, Review and outline of the diagnosis and management of a spinal synovial cyst was presented. Discussion surrounding patient history, physical examination and advanced imaging findings was outlined. Structure and appearance of synovial cyst on T1 and T2 weighted MRI was presented, and the benign nature of these lesions was reviewed. Indications for specialist referral and patient centered management ranging from watchful waiting to surgical intervention due to neurologic compromise was reviewed. Advanced imaging differences between plain film radiographs, CT and MRI was outlined and discussed. MRI signal on T2 weighted image in relation to cerebral spinal fluid was highlighted. Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2022

**Clinical Grand Rounds - *Diagnosis and Management of Vertebral Osteomyelitis***, Review of the causes of vertebral osteomyelitis was presented including findings on patient subjective complaint and objective

*findings on physical examination. Differentiation between plain film radiographs, T1, T2, Flair and STIR weighted imaging was presented and discussed. Associated clinical findings including infections in adjacent areas including intervertebral discitis areas was presented. Causes of osteomyelitis including past surgical procedure, frequent injections, infection in an adjacent tissue, IV drug use and long-term corticosteroid use were presented. Anterior elements of the functional motor unit were outlined as the primary location of osteomyelitis. Correlation clinically to difficulties in identifying this clinical entity in its early stages was reviewed. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards - PACE. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2022*

**Clinical Grand Rounds - Diagnosis and Management of Lumbar Arachnoiditis,** *Outline of the causes of arachnoiditis in the human spine was presented. Specific focus was on a case of lumbar arachnoiditis involving the cauda equina evidenced on T1, T2 sagittal and axial MRI. Treatment options and lack of curative interventions was presented. Relevant anatomy of the lumbar spine including cauda equina, conus medullaris, filum terminale, dura mater, pia mater and arachnoid mater were reviewed in detail. Review of arachnoiditis and chiropractic adjustment were discussed as well as interprofessional coordination of care with interventional pain management and surgical consultation. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards - PACE. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2022*

**Clinical Grand Rounds - Diagnosis and Management of Post-Surgical Cervical Facet Syndrome,** *A case of persistent and worsening neck and left shoulder pain post-surgical fusion was presented. Pre and post plain film and advanced imaging slides were reviewed and correlated clinically to left sided mid-scapular pain. Physical examination including orthopedic and neurological testing was discussed in correlation to presenting symptoms. Differential diagnosis of radiculopathy, radiculitis, discogenic pain, scapular myofascial syndrome and thoracic intersegmental dysfunction was presented. Cervical facet joint referral patterns were reviewed and outline of referral for diagnostic facet joint block was discussed. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards - PACE. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2022*

**Clinical Grand Rounds - Diagnosis and Management of Anterior Sacral Contusion,** *Overview and discussion of contusion of the anterior sacral ala in an elite college cross-country runner. Physical examination outlining range of motion, neurological and orthopedic examination was reviewed and correlated to the subjective complaint of right sided lower back pain. Misdiagnosis was presented and long-standing symptoms resulting in possible cessation of play for this athlete. Discussion of interprofessional communication with the neuroradiologist and subsequent MRI order with slices through the anterior sacrum was reviewed and presented. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards - PACE. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2022.*

**National Spine Management West Conference 2022 - LIVE WEBCAST - Preparing for Litigation – it starts with your documentation –** *outline of updated compliant reporting of the patient encounter within E/M evaluations, daily progress notes, goal setting and interprofessional management/referral was presented. Medical legal hurdles were explained and the impact of documentation on court room presentations was demonstrated. Overview of objective evidence in the diagnosis and management of*

*traumatically injured patients was presented. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, PACE, 2022.*

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

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

**National Spine Management West Conference 2022 - LIVE WEBCAST - Spine Management and the Future of Spine Care** - *Discussion of the role of a spine manager in the daily treatment of spine patients was presented. Emphasis was placed on the understanding of the roles of other providers in the care paradigm including interventional pain management, spine surgery and rehabilitation professionals. Interprofessional communication techniques were presented with a focus on diagnosis and management in a patient centered environment. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, PACE, 2022.*

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

**National Spine Management West Conference 2022 - LIVE WEBCAST - Communicating with the Spine Surgeon** - *Detailed review of the scientific literature supporting interprofessional collaboration between the spine surgeon and the Doctor of Chiropractic was presented. Emphasis on updated needs of the spine surgeon with focus on the understanding of pre and post-surgical chiropractic care. Literature updates and documentation requirements were discussed. Specific talking points are provided for telecommunication with the spine surgeon. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, PACE, 2022.*

**National Spine Management West Conference 2022 - LIVE WEBCAST - Communicating with the Pain Management Physician** - Review of the scientific literature supporting interprofessional collaboration with the interventional pain management physician was outlined. Updates and review of the chiropractic scientific literature in relation to pain management mechanisms of the chiropractic adjustment were presented. Documentation and interprofessional referral, communication and telecommunication talking points for daily practice was outlined. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, PACE, 2022.

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

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

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

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

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

**National Spine Management West Conference 2022 - LIVE WEBCAST - Communicating with the Lawyer – Low Speed Collisions** - *Discussion of the medical-legal implications of injuries sustained as a result of a low speed/impact collision resulting in minimal property damage was outlined. Clinical correlation to the low-speed mechanism of injury, objective physical examination findings, results of advanced imaging and persistent functional loss was reviewed. Medical legal discussion related to the correlation between impact forces and human spinal tolerance with particular attention being given to pre-existing degenerative spinal conditions was presented.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, PACE, 2022.

**National Spine Management West Conference 2022 - LIVE WEBCAST - Anatomy of a Narrative Report – departing from gimmicks** - *Presentation on the flow of clinical information into the medical-legal format used by adjusters, attorneys, judges, jurors, and law clerks was provided. Key indicators of persistent functional loss such as physical examination findings, global and segmental range of motion, advanced imaging findings and results of electrodiagnostic testing were outlined. Direct discussion on where in a narrative report these findings are to be written with an emphasis on patient assessment and expert opinion.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, PACE, 2022.

**National Spine Management West Conference 2022 - LIVE WEBCAST - Advanced Imaging Protocols – update of the science of MRI** - *Detailed review of common MRI sequences for spine imaging will be presented including T1, T2 and STIR in the sagittal and axial planes was presented. Additional sequences such as Proton Density, Diffusion Weighted and Dixon was detailed and reviewed. Particular attention was given to ordering contrast medium in a spine care practice.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, PACE, 2022.

**National Spine Management West Conference 2022 - LIVE WEBCAST - Spine Care Leadership – educating the medical community** - *Overview of spine care leadership and the processes of creating an Evidence-Based, Patient Centered reputation in your community was discussed. Focus on structuring a medical community outreach program, what topics to include and the process of building support was*

*detailed. This section outlined the differences between the various stakeholders in the medical community including nurses, physician assistants, physicians, and administrative support staff was discussed. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, PACE, 2022.*

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

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

**National Spine Management West Conference 2022 - LIVE WEBCAST - Updated Chiropractic Science Research** - *Review and discussion of 2021/2022 research supporting the chiropractic profession and the doctor of chiropractor as a spine care manager was outlined. Specific papers were presented related to the pain management, corrective, and health maintenance phases of chiropractic care.*

*Overview of current and future research trends were demonstrated in relation to the pain management phase, corrective care phase and health maintenance phase of chiropractic management. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, PACE, 2022.*

**Grand Rounds – Chiropractic Management – CT Lumbar Spine Anatomy** – *detailed review of anatomical structures in the axial, sagittal and coronal planes of CT of the lumbar spine. Musculature presented included gluteus medius, psoas major, multifidus, iliacus, lumbar paraspinals and quadratus lumborum in both the T1 and T2 axial sequences. Emphasis was placed on the structure and morphology of the hard tissues of the spine with particular focus on the facet joints and pars interarticularis. Location and anatomical structure of the sacroiliac joint was presented and discussed. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences – November 17, 2022.*

**Grand Rounds – Chiropractic Management and Patient Triage** – *review and discussion on the beginning of patient triage at phone intake was presented and related to the physical examination, review of diagnostic imaging and diagnosis. Detailed discussion of proper triage protocols including physical examination findings, plain film radiographs, MRI, diagnosis, and response to care was presented. Evidence based utilization of advanced imaging protocols was detailed including presence of neurological deficit non-response to care, increase in radicular symptoms and spinal instability on plain film imaging. Overview of interprofessional communication during triage including last E/M report, imaging reports, specialist referral and demographic sheet was presented.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences – November 3, 2022.

**Grand Rounds – Indications and Absolute/Relative Contraindications to Chiropractic Care** – *review of inclusion criteria accompanying modification of chiropractic treatment plan due to an absolute or relative contraindication to chiropractic care. Examples of clinical rationale, physical examination findings and proper diagnoses were provided. Review of the definitions of both relative and absolute contraindications to chiropractic care, specific details on referral to medical specialty were provided. Analysis of regional contraindications and treatment in adjacent regions were provided and discussed. The keys to understanding indications to care were detailed including the patient interview, review of medical records, diagnosis, and spinal examination findings. Review of most common reasons for chiropractic license violations were presented including application of the chiropractic adjustment to a contraindicated condition, failing to refer in the presence of a contraindication, failure to properly evaluate the patient to determine if a contraindication is present and failing to properly document the patient encounter.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences – October 27, 2022.

**Clinical Grand Rounds – X-ray Dosage, Sagittal Balance and Surgery Success Rates** – *discussion related to millisievert and cumulative effective dose was presented. Outline of the definition and research process of achieving Minimal Clinically Important Difference in spine surgery was discussed. CED levels below 100mSv was reviewed and compared to patients receiving multiple plain film radiographs. Discussion and relation of spinal biomechanics, sagittal balance, utilization of spine radiographs and MRI to working with the neurosurgeon was outlined.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences – October 20, 2022.

**Clinical Grand Rounds – Acute vs Chronic Radial Fissures – Diagnosis and Management** – *outline of morphological presentations of concentric, radial and transverse fissures within the annulus fibrosus of the intervertebral disc. Consensus driven definitions were presented as outlined by recommendations of the combined task forces of the North American Spine Society, American Society of Spine Radiology, and American Society of Neuroradiology. Modified Dallas Classification of annular fissures was reviewed and outlined. Specific correlation to annular fissure type and intervertebral disc morphology was detailed. Specific correlative factors linking annular fissures with acute and chronic injury was presented and reviewed.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE,



State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences – October 13, 2022.

**Clinical Grand Rounds – Intervertebral Disc Nomenclature and Morphology** – *discussion of intravertebral disc morphology was presented and reviewed. Correlation between morphological and ideological findings was presented. Detailed review of spondylosis deformans, intravertebral osteochondrosis, intravertebral disc herniation and bulge was outlined. Specific detail was placed on changes in disc morphology due to ligament injury in the human spine. Clinical correlation of disc herniation versus disc bulge was presented. Overview and detailed analysis of types of annular tearing in the disk was presented with an emphasis on the delineation between clinical findings and findings on advanced imaging.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences – October 6, 2022.

**Clinical Grand Rounds – Trial Testimony and the Spine Management Patient** – *discussion and presentation of the trial process and requirements of both the treating physician and expert physician was outlined. Emphasis was placed on detailed preparation of case flow and objective demonstrable findings. Review of courtroom proceedings including witness and expert testimony was included. Expert versus treating physician requirements were presented. Emphasis was placed on thorough evaluation and narrative reporting processes to prepare for court room questioning. Specific review of illustration of demonstrative evidence was outlined.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences – September 29, 2022.

**Clinical Grand Rounds – Degenerative versus Acute Intervertebral Disc Pathology** – *review of the scientific and validated process for evaluating degenerative disc disease in the human spine was reviewed. Detailed analysis of differentiating between acute and chronic changes was emphasized. Overview and discussion of advanced imaging as well as plain film radiographs with dynamic views was presented. Review in detail of the Pfirrmann scale and it's association with intravertebral disc degeneration was presented including all Pfirrmann grades with illustrative reference.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards – PACE, State University of New York at Buffalo Jacobs School of Medicine, and Biomedical Sciences – September 15, 2022.

**Clinical Grand Rounds - Diagnosis and Management of Schwannoma** – *discussion of a case pertaining to traumatically induced pathology to the spine of a 59-year-old female. Outline of pathological reflexes and detailed physical examination best practices. Review of important imaging included CT axial, CT sagittal and CT coronal views as well as T2 FSE sagittal, T2 FSE axial and STIR Sagittal MRI studies were reviewed and clinically correlated. Relevant cervical and lumbar spinal anatomy in the sagittal, axial and coronal planes was detailed on MRI and CT studies. Interprofessional communication with the spine surgeon was presented and review of surgical intervention including ACDF (anterior cervical discectomy and fusion) procedure to the patient's cervical spine.* Spine Management Group, LLC, Federation of Chiropractic Licensing Boards - PACE. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences – March 3, 2022.

Activator Methods Annual Class: **Upper Extremity Adjusting**, *Advanced class featuring demonstrations of focused clinical problem solving emphasizing advanced tests and adjustments for extremities. Also includes overviews on a broad range of clinical topics relevant to chiropractors based on the recently published evidence and research.* Activator Methods International through Activator Institute, Portland OR, 2021

**Oregon Suicide Awareness and Cultural Competency** Coursework, *Continuing Education Requirement for Oregon Licensure, discussion of risk factors for suicide, and discussion of cultural competency in today's environment.* Online Continuing Ed, LLC, Portland, OR, 2021

Clinical Grand Rounds - **Chiropractic Diagnosis and Management of Whiplash Disorder**, *Outline and discussion of Whiplash as a mechanism of injury with particular focus on damage to underlying tissue structures. Review of anatomy, with specific focus on surrounding muscular, supraspinous ligament, interspinous ligament, spinal nerve, spinal cord, facet capsule and dorsal/ventral nerve roots was presented. Clinical correlation to imaging studies and its influence on management of the Whiplash patient was reviewed. Focused attention was paid to Whiplash as a mechanism of injury and not a complete diagnosis.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, PACE, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2021

Clinical Grand Rounds - **Chiropractic Diagnosis and Management of Vertebral Compression Fracture**, *Review of the influence of osteoporosis on development of vertebral compression fracture was reviewed and detailed in comparison to neoplasm. Utilization of MRI as the gold standard for evaluating the age of and pathophysiology was discussed and presented. Absorptiometry was outlined and presented in relation to monitoring bone density. Interprofessional communication of absolute versus relative contraindications to conservative care and spinal manipulation was outlined and reviewed. Review of the three columns of vertebral architecture was detailed.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, PACE, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2021

Clinical Grand Rounds - **Chiropractic Diagnosis and Management of the Post-Surgical Patient**, *Outline and analysis of spinal biomechanical parameters in a whole spine model of care in the post-surgical analysis of the spine pain patient. Review of the details of measuring Pelvic Incidence and discussion of history of its analysis in relation to sagittal balance and vertebral body rotation was discussed. Outline of movement from a regional model of spine care to a full spine model was presented particularly in the context of pain management strategies post-surgery. Analysis of the components of the post-surgical patient including muscle movement patterns, segmental mobility, spinal curvature and rotation in the coronal, sagittal and axial planes was presented. Interprofessional communication and co-management was emphasized.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, PACE, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2021

Clinical Grand Rounds - **Chiropractic Diagnosis and Management of the Pre-Surgical Patient**, *Outline and analysis of spinal biomechanical parameters in a whole spine model of care. Review of the details of measuring Pelvic Incidence and discussion of history of its analysis. Outline of movement from a regional model of spine care to a full spine model was presented. Analysis of the components of the pre-surgical patient including muscle movement patterns, segmental mobility, spinal curvature and rotation in the coronal, sagittal and axial planes was presented.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards - PACE. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2021

Clinical Grand Rounds - **Chiropractic Diagnosis and Management of Lumbar Ligament Laxity**, *Detailed outline of injury thresholds of the anterior longitudinal, posterior longitudinal and ligamentum flavum was presented in the lumbar spine. Review of structural and physiological properties relating to stress/strain curve of the above ligaments. Outline of the toe region, linear region and failure region was demonstrated. Transversely isotropic material properties of spinal ligaments was included and correlated to chiropractic care and impairment rating using the AMA Guides to the Evaluation and Management 5th and 6th editions.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards - PACE. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2021

Clinical Grand Rounds – **Chiropractic Diagnosis and Management of Cervical Ligament Laxity**, *Detailed outline of injury thresholds of the anterior longitudinal, posterior longitudinal and ligamentum flavum was presented. Review of structural and physiological properties relating to stress/strain curve of the above ligaments. Outline of the toe region, linear region and failure region was demonstrated. Transversely isotropic material properties of spinal ligaments was included and correlated to chiropractic care and impairment rating using the AMA Guides to the Evaluation and Management 5th and 6th editions.* National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards - PACE. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2021

Clinical Grand Rounds – **Chiropractic Management of Cervical Myelopathy**, *Review of all relevant spinal anatomy in the cervical and lumbar spine including vertebral bodies, central canal, neuroforamen, ligamentum flavum, anterior and posterior longitudinal ligaments, facet capsule, interspinous ligament, supraspinous ligament and spinal cord anatomy. Review of spinal cord anatomy included white and gray matter, ventral and dorsal nerve roots, spinal nerve including the dura mater, arachnoid mater and pia mater. Specific review of patient history, mechanism of injury, physical examination including neurological and orthopedic evaluation as well as criteria for ordering and reading advanced imaging such as MRI and CT were presented in relation to cervical myelopathy, spinal cord compression and myelomalacia. Patient centered; consensus driven clinical diagnosis including interprofessional communication was presented, specific presentation relating to diagnostic outcomes and management.*

*Attention was given to MRI and CT myelogram in both the uncomplicated and complicated patient. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards - PACE. State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2021*

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

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

*Clinical Grand Rounds – **Importance of Interprofessional Healthcare Communication and Teamwork**, Discussion of the history of interprofessional healthcare and the acknowledgement by the World Health Organization was presented. Specific detail on chiropractic academia and student perception of its importance was outlined. The growth and importance of both interprofessional education and communication was stressed and reviewed. Need for a clear professional identity to facilitate interprofessional education and communication 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, Buffalo, NY, 2021*

*Clinical Grand Rounds – **Cervical Spinal Alignment and Knee Replacement Revision Rates**, Review of the most common cervical spinal sagittal alignment parameters and their relationship to interprofessional*

*communication was presented. Discussion of rationale for knee replacement revision surgery including aseptic loosening, fracture and prosthetic joint infection was reviewed. Specific statistical review on revision surgery and effective treatment of end-stage knee osteoarthritis was presented. Details of evidence-based research outlining patients with cervical degenerative disorders having a higher rate of total knee replacement revisions than those without degenerative changes. Analysis of the benefit of radiographic studies looking at the mechanical relationship between the cervical spine and knee composition was outlined 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, Buffalo, NY, 2021*

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, Lehi, UT, 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, Lehi, UT, 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, Lehi, UT, 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, Lehi, UT, 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, Lehi, UT, 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, Lehi, UT, 2021

2021 Spine Management Conference – West – **Patient Communication**, *Communication techniques were discussed with emphasis on patient comprehension to increase compliance and reduce patient anxiety. Details were presented on simplification of complex medical terminology to ensure understanding at the initial visitation as well as throughout the patient's care plan. Conversational interaction and dissemination of health information at the appropriate comprehension level was provided. Proper reporting and interprofessional communication were emphasized in a wholistic approach to supporting the patient's needs.* National Spine Management Group, LLC, Federation of

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

2021 Spine Management Conference – West – **Differential Spinal Tissue and Spinal Injury Triage**, *Review of spinal tissue types and their response to physical stress and injury was presented. Prognostic*

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

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

Clinical Grand Rounds – **Pelvic Incidence**, *Chiropractic and the Spine Surgeon, Detailed analysis of the historical publication of Pelvic Incidence as a integral part of sagittal spinal balance. Inter-professional communication with the surgeon using peer reviewed medically indexed biomechanical parameters was outlined and presented. Functional interaction between the spine and pelvis was demonstrated and discussed. Components of Pelvic Incidence, sacral slope, pelvic tilt and femoral heads were reviewed and demonstrated on plain film radiographs. Specific updated research regarding spinal pelvic balance and pelvic incidence measurements was provided. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2021*

Clinical Grand Rounds – **Patient Triage** – *testing and physical examination workflows, Evidence-based evaluation of the spine pain patient was outlined and presented. Thorough review of criteria for ordering plain film and advanced imaging was discussed and demonstrated. Clinical rationale for ordering electrodiagnostic testing and patient referral criteria overview was demonstrated. EMR and*



*documentation workflows were discussed, and efficiency protocols were outlined and applied to evidence based physical examination procedures with and without a medical scribe. Details of re-evaluations and clinical outcomes were reviewed 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, Buffalo, NY, 2021*

Clinical Grand Rounds – **Diagnosis of Lumbar Facet Syndrome**, *Overview of the most common pain syndrome in the lumbar spine including societal burdens was presented. Discussion of facet joint arthrosis being the most frequent facet joint pathology in the human spine. Outline of level of correlation between clinical symptoms, physical examination findings and degenerative spinal conditions was discussed. Presentation of diagnostic facet block and the medical necessity of such a referral when indicated was 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, Buffalo, NY, 2021*

Clinical Grand Rounds – **Biomechanical Analysis in Patient Crash Injuries**, *Detailed review of the difference between biomechanical and biomedical analysis of injuries was presented. Outline of necessity of the use of properly credentialed biomechanical and crash investigation professionals in the diagnosis, management and reporting of crash injuries. Review of specific research related to forces during Activities of Daily Living and those sustained in a crash were presented. Details of a proper biomechanical analysis were discussed and specific review of a biomedical report omitting the mathematical calculations needed to determine force and injury potential was presented. Additional review of methods needed to determine expertise of the biomechanistic or accident investigation 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, Buffalo, NY, 2021*

Clinical Grand Rounds – **Facet Joint Thresholds and Alteration of Motion Segment Integrity**, *Discussion of the predominant mode of joint loading of the cervical facet joints during whiplash injury related to retraction tension on the facet joint capsule. Review of shear forces, translation of the inferior and superior facet joint as well as injury risk due to excessive stretching of spinal ligaments was presented. Overview and discussion of mechanical trauma to ligament tissue and subsequent microstructural damage not visibly detected was outlined. Threshold for microstructural changes during retraction, reduced ligament stiffness and unrecovered strain was discussed in detail. Individual response to facet joint capsule response supported in the medical literature 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, Buffalo, NY, 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 sequelae 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, Buffalo, NY, 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, Buffalo, NY, 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, Buffalo, NY, 2021.*

Clinical Grand Rounds – **Biomechanical Compensation and Intervertebral Disc Extrusion**, *Detailed review of MRI documented lumbar disc extrusion measuring 12mm including STIR, T1 and T2 sagittal and axial images. Presentation of radiographic biomechanical analysis outlining sagittal alignment and vertebral body rotations. Discussion of co-management of spinal pathology while considering both the biomechanical and anatomical components of spine pain. Radiographic review included lateral neutral, lateral flexion, lateral extension and AP views. Clinical correlation and discussion of pre and post-surgical care was 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, Buffalo, NY, 2021.*

Clinical Grand Rounds – **Nomenclature and Morphology of Intervertebral Disc Pathology**, *Updated review and demonstration of intervertebral disc nomenclature related to intervertebral disc*

*degeneration, trauma and other pathology. Specific attention paid to the agreed upon nomenclature between the Combined Task Forces of the North American Spine Society, American Spine Society, American Society of Spine Radiology and American Society of Neuroradiology. Details were provided in comparison to intervertebral disc herniation and intervertebral disc degeneration. Radial fissures were reviewed and outlined including circumferential, transverse and radial pathology and its anatomical relation to the intervertebral disc. National Spine Management Group, LLC, Federation of Chiropractic Licensing Boards, State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Buffalo, NY, 2021.*

*Clinical Grand Rounds – **Pathophysiology of Osteophyte Formation**, Discussion and presentation of extraspinal and vertebral osteophyte classification. Review of traction osteophyte formation and its relationship to the vertebral body and degenerative changes was discussed. Factors influencing osteophyte formation such as Transforming Growth Factor Beta and the relationship to the initiation of osteochondrosis was outlined. Details of segmental osteophyte formation on regional biomechanics was reviewed. Peer reviewed evidence of the effects of spinal arthrodesis on adjacent segment degeneration, anterior and posterior osteophyte formation 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, Buffalo, NY, 2021.*

*National Spine Management Conference East 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, Fort Lauderdale, FL, 2021.*

*National Spine Management Conference East 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, Fort Lauderdale, FL, 2021.*

*National Spine Management Conference East 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 Patho biomechanics in chiropractic practice. National Spine Management Group, Cleveland University Kansas City, Chiropractic and Health Sciences, Federation of Chiropractic Licensing Boards, Buffalo, NY, Fort Lauderdale, FL, 2021.*

*National Spine Management Conference East 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, Fort Lauderdale, FL, 2021.*

National Spine Management Conference East 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, Fort Lauderdale, FL, 2021.*

National Spine Management Conference East 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, Fort Lauderdale, FL, 2021.*

National Spine Management Conference East 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, Fort Lauderdale, FL, 2021.*

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

National Spine Management Conference East 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, Fort Lauderdale, FL, 2021.*

National Spine Management Conference East 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, Fort Lauderdale, FL, 2021.*

National Spine Management Conference East 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, Fort Lauderdale, FL, 2021*

National Spine Management Conference East 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, Fort Lauderdale, FL, 2021.*

National Spine Management Conference East 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 Edition. 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, Fort Lauderdale, FL, 2021.*

**Cultural Competency and Professional Boundaries**, *Discussion of Cultural Competency in today's work environment. Oregon Chiropractic Association, Portland, OR, 2021*

**Cutting Edge research,** *Discussion of current research trends and options.* Oregon Chiropractic Association, Portland, OR, 2021

**MVA Documentation:** *Supporting the Patient Diagnosis of Concussion, Discussion of compliant documentation requirements in motor vehicle cases.* Oregon Chiropractic Association, Portland, OR, 2021

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

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

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

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

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

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

**Spinal Biomechanical Engineering Clinical Application,** *History of clinical biomechanics with an emphasis on the diagnosis and management of spine pain of mechanical/functional origin. Evidence-based symptomatic vs. asymptomatic parameters using peer-reviewed medical index literature.*

*Computerized mensuration analysis of spinal biomechanical pathology. Comparison of demonstrable spinal biomechanical failure on imaging to clinical evaluation and physical examination. Academy of Chiropractic Post-Doctoral Division, Cleveland University-Kansas City, Long Island, NY, 2020*

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

**Activator Methods** Annual Class: Clinical Topics, *Advanced class featuring demonstrations of focused clinical problem solving emphasizing advanced tests and adjustments for the spine and extremities. Also includes overviews on a broad range of clinical topics relevant to chiropractors based on the recently published evidence and research. Topics range from diagnostic challenges in the older patient to dose-response and efficacy of chiropractic care for patients experiencing back pain, neck pain, or radiating extremity pain. Activator Methods International, Portland, OR, 2020*

**Nutritional Causes of Musculoskeletal Pain**, *Discussion of basic nutritional concepts in the treatment of musculoskeletal pain. Oregon Chiropractic Association Annual Winter Convention, Portland, OR, 2020*

**Opioids, Pain & Chiropractic**, *Continuing discussion of the current opioid crisis and how Chiropractic may be able to help reverse the trend. Oregon Chiropractic Association Annual Winter Convention, Portland, OR, 2020*

**Personal Injury** for Busy Providers and Staff, *Discussion of the nuances of personal injury cases and the challenges of integrating them into a busy practice. Oregon Chiropractic Association Annual Winter Convention, Portland, OR, 2020*

**Functional Neurology Approach to Treating TBI**, *Discussion of current best practices in treatment of TBI using functional neurology techniques. Oregon Chiropractic Association Annual Winter Convention, Portland, OR, 2020*

**Epigenetic Contributors to Painful Lumbar Discs**, *Discussion of behavioural and genetic factors in relation to Low Back Pain. Oregon Chiropractic Association Annual Winter Convention, Portland, OR, 2020*

**Utilization of Research in the Clinical setting**, *utilizing peer reviewed scientific literature in creating a diagnosis, prognosis and treatment plan for the chronic and acute patient. How to implement and stay current on techniques and technology in healthcare. Cleveland University – Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2019*

**Triaging the Trauma and Non-Trauma Patients**, *correlating clinical findings and the patient history in determining the correct course of care in triaging the patient utilizing orthopaedic and neurological evaluations in the clinical setting. Understanding the parameters for immediate referrals vs. following the continuum of care to determine the necessity for referrals. Cleveland University – Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2019*

**Forensic Documentation - Report Writing**, *Report writing in a medical-legal case inclusive of causality, bodily injury, persistent functional loss and restrictive sequela from trauma. Demonstratively*

*documenting bodily injury utilizing models, graphs and patient image of x-ray and advanced imaging.*  
Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019

**Forensic Documentation - Demonstrative Documentation**, *demonstratively reporting spinal biomechanical failure and spinal compensation. How in a medical-legal environment to ethically report pre-existing injuries vs causally related current injuries and what is permissible in a legal proceeding.*  
Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019

**Forensic Documentation - Reporting Direct Opinions**, *Causality, bodily injury and persistent functional losses documented and reported in a medical-legal environment as your direct opinion. Avoiding hearsay issues to ensure ethical relationships.* Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019

**Forensic Documentation - Initial, Final and Collaborative Reporting**, *Preparing demonstrative documentation in a medical-legal case ensuring that you are familiar with all other treating doctor's reports. Correlating your initial and evaluation and management (E&M) report and your follow-up E&M reports with the narrative upon maximum medical improvement documenting continuum of care.*  
Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019

**Forensic Documentation - Qualifications and Preparation of Documentation**, *How to prepare your documentation for courtroom testimony and ensuring your qualifications are documented properly on an admissible, professional curriculum vitae. How to include indexed peer-reviewed literature in medical-legal documentation.* Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019

**Forensic Documentation - Reporting Patient History and Credentials**, *Preparing patient history in a medical-legal case based upon your initial intake forms and understanding the work, social, academic, household and social activities of your patient. Understanding and explaining your doctoral and post-doctoral credentials in the courtroom.* Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019

**Forensic Documentation - Reporting Chiropractic Care and Injured Anatomy**, *Preparing demonstrative documentation in a medical-legal case to report the bodily injuries of your patients, inclusive of loss of function and permanent tissue pathology.* Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019

**Forensic Documentation - Reporting Temporary vs. Permanent Issues**, *Preparing documentation in a medical-legal case ensuring that you can communicate permanent vs. temporary functional losses and permanent vs. temporary tissue pathology. How to maintain and explain ethical relationships in medical-legal cases.* Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019

**Forensic Documentation- Reporting Bodily Injury**, *How to report bodily injury and functional losses as supported by your credentials in a medical-legal case. Clinically correlating causality and permanent tissue pathology as sequela to trauma.* Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019



**Forensic Documentation- Record Review and Documentation Reporting**, *How to report records of collaborative treating doctors and communicating your scope of practice in the management of your case. How to ethically report your role as a doctor in medical-legal cases.* Cleveland University, Kansas City, 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, 2019

**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, 2019

**Medical-Legal Ethical Relationships, Documentation and Direct Testimony**, *organizing your documentation and understanding all collaborative documentation and how it fits into your diagnosis, prognosis and treatment plan, Understanding the nuances of the functional losses of your patients related to their bodily injuries,* Academy of Chiropractic, Post-Doctoral Division. Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2019

**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, 2019

**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, 2019

**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, 2019

**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, 2019

**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, 2019

**Medical-Legal Ethical Relationships, Report Writing and Preparing for a Legal Case, Part 1** *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, 2019

**Medical-Legal Ethical Relationships, Report Writing and Preparing for a Legal Case, Part 2** *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, 2019

**Trends in Spinal Treatment,** *Management of spinal care for mechanical spine issues from hospitals and medical specialists to trauma qualified chiropractors based upon published outcomes. Utilizing imaging studies in spinal biomechanics, pain models and clinical outcomes to determine a conclusive diagnosis, prognosis and treatment plan for triaging in a collaborative environment.* Cleveland University Kansas City, Chiropractic and Health Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2019

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

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

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

**Central Innervation of Spinal Biomechanical Engineering,** *Understanding the lateral and ventral horn's innervations of Pacinian Corpuscles, Ruffini Corpuscles, Golgi Organ Receptors, Nociceptors, Proprioceptors and Mechanoreceptors, and the pathways through the spinal thalamic tracts through the periaqueductal region, the Thalamus into the Occipital, pre-frontal, sensory and motor cortexes and then efferently back through the Thalamus to disparate regions in creating spinal homeostasis.* Cleveland

University Kansas City, Chiropractic and Health Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2019

**Identifying Spinal Pathology of MRI, Utilizing T1, T2, STIR, and Gradient studies in determining myelomalacia, intra and extra-dural tumors, and systemic disease patterns affecting the spinal cord. When to use contrast post-operatively in identifying discal structures vs. adhesions in 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

**Computerized Mensuration of Spinal Biomechanical Pathology, Understanding the algorithmic interpretation of spinal biomechanical pathology in a 3-D model and creating treatment plans, impairment ratings and teaching models based upon the vertebral motor unit angles. Determining sagittal and axial alignments in creating a normative baseline for treatment goals and outcomes.** Cleveland University - Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island NY, 2019

**Neurosurgical-Chiropractic Collaboration on Spinal Pathology, utilizing x-ray, MRI and other modalities of advanced imaging in conjunction with spinal biomechanical failure and clinical evaluation to collaboratively create treatment protocols for patients in both the operative and non-operative cases. Determining the boundaries of scope of care for both the chiropractor and neurosurgeon based upon a definitive diagnosis of the mechanical vs. an anatomical lesion.** Cleveland University - Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island NY, 2019

**Documentation and Ethics in Medical-Legal Relationships, Creating ethical relationships based upon accurate documentation reflective of the casually related condition of the injured. Ensuring accepted credentials of the doctor based upon Voi Dire standards reflected in an admissible curriculum vitae. How to present demonstrative documentation in the courts reflective of the patient's pathology.** Cleveland University - Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island NY, 2019

**Coding, Documentation and Compliant Coding, Ensuring the correct codes are utilized in an evaluation and management encounter. The correct elements are utilized to support the level of E&M coded along with a self-audit program to ensure ethical billing occurs. Guidelines for history of present illness, primary complaint, review of systems, family, social and past histories are discussed and how to document the same.** Cleveland University - Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island NY, 2019

**Traumatic Brain Injury and Concussion Overview: This section is an in-depth overview of traumatic brain injury in concussion. It discusses that all brain injuries are traumatic and dispels the myth of a "mild traumatic brain injury." Also, this covers triage protocols and the potential sequela of patients with traumatic brain injuries.** Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019

**Head Trauma and Traumatic Brain Injury Part 1: This section discusses gross traumatic brain injuries from trauma and significant bleeding with both epidural and subdural hematomas. There are numerous**

*case studies reviewed inclusive of neurosurgical intervention and postsurgical outcomes. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019*

**Head Trauma and Traumatic Brain Injury Part 2:** *This section continues with multiple case studies of gross traumatic brain injuries from trauma requiring neurosurgical intervention and also discusses recovery sequela based upon the significance of brain trauma. This module also concludes with concussion protocols in traumatic brain injury short of demonstrable bleeding on advanced imaging. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019*

**Concussion And Electroencephalogram Testing:** *This this section covers concussion etiology and cognitive sequela where gross bleeding has not been identified on advanced imaging. It discusses the significance of electroencephalogram testing in determining brain function and pathology (if present). This module also covers the understanding of waveforms in electroencephalogram testing in both normal and abnormal scenarios. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019*

**Concussion And Electroencephalogram Testing Pathological Results:** *This module covers amplitude, conduction and conduction delays as sequela to traumatic brain injury to diagnose concussion and traumatic brain injury in the absence of gross bleeding and advanced imaging. This section covers electroencephalograms and event-related potentials which measures the brain response that is a direct result of specific sensory or motor events. It is a stereotype electrophysiological response to a stimulus and provides a noninvasive means of evaluating brain function. In this module multiple case studies are discussed with ensuing triage protocols pending the results. Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019*

**Evidenced Based Care in a Collaborative Setting; Primary Spine Care 5,** *A literature-based model for collaborating with hospitals, medical primary care providers and specialists. Reviewing the documentation requirements to communicate the diagnosis, prognosis and treatment plans with medical entities and having the evidence as a basis for those recommendations. Academy of Chiropractic Post-Doctoral Division, Cleveland University- Kansas City, Long Island, NY, 2019*

**Current Literature Standards of MRI Spine Interpretation;** *Primary Spine Care 5, MRI Spine Interpretation of the spine. How to triage a trauma and non-trauma with advanced imaging and document the necessity. We will also cover the basics of MRI Spine Interpretation inclusive of all types of herniations, bulges, Academy of Chiropractic Post-Doctoral Division. Academy of Chiropractic Post-Doctoral Division, Cleveland University- Kansas City, Long Island, NY, 2019*

**Spine Brain Connection in Pain Pathways; Primary Spine Care 5, MRI Spine** *The spine-brain connection in managing chronic pain patients. Understanding how chronic pain negatively effects brain morphology and potential pathology as sequella. The role of chiropractic in preventing the loss of gray matter and the most recent evidence as outlined in indexed peer reviewed literature over the last 10 years verifying chiropractic's role. Academy of Chiropractic Post-Doctoral Division, Cleveland University- Kansas City, Long Island, NY, 2019*

**Bio-Neuro-Mechanical Mechanism of the Chiropractic Spinal Adjustment;** *Primary Spine Care 5, The biological, neurological and mechanical mechanisms and pathways from the thrust to the dorsal horn and brain connection and how the brain processes the chiropractic spinal adjustment based upon the*

*literature. Care paths of chiropractic and physical therapy from an outcome basis, Academy of Chiropractic Post-Doctoral Division. Academy of Chiropractic Post-Doctoral Division, Cleveland University- Kansas City, Long Island, NY, 2019*

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

## **SELECTED MEMBERSHIPS**

**National Spine Management Group, Member, 2020 - Present**

**Academy of Chiropractic, Member, 2017 – 2020**

**Washington State Chiropractic Association, Member, 2017 – 2019**

**Oregon State Chiropractic Association, Member, 2017- Present**

## **SELECTED COMMUNITY SERVICE**

**Humanitarian Service to People of India, New Delhi & Hyderabad, Palmer College Clinic Abroad Program, June 2014**

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

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

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

**Primary Spine Care 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 sequela to trauma in relationship to bulges, herniations, protrusions, extrusions and sequestrations. Aberrant spinal biomechanics and negative sequela to trauma. Cleveland University – Kansas City, Academy of Chiropractic, Setauket NY, 2019**

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

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

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

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

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

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

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

**Advanced Orthogonal Seminar**, *Advanced Leg checks, Measuring Genetic Aberrancy, Dimensional Transposition, Table Placement review, Head Height angle and Y Template, Negative Z angle, Laser Alignment, Post X-Ray interpretation.* Sherman College of Chiropractic and the Simmons Chiropractic Clinic, Tacoma, WA, 2019

**Evaluation and Management**, *An overview of the evaluation and management process inclusive of utilizing electronic medical records to conclude evidenced-based conclusions with the utilization of macros. The importance of adhering to an academic standard and considering co-morbidities.* Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019

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

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

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

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

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

**Neurology of Ligament Pathology- Normal Morphology and Tissue Damage,** *Connective tissue morphology, embryology and wound repair as sequalee to trauma. Full components of strain-sprain models and permanency implications with wound repair and osseous aberration with aberrant structural integrity.* Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2019

**Neurology of Ligament Pathology- Spinal Biomechanics and Disc Pathology,** *Disc pathology as sequella to trauma; herniation, extrusion, protrusion, sequestration and how the spinal unit as one system creates homeostasis to balance the pathology.* Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2019

**Neurology of Ligament Pathology- Neurological Innervation,** *The peripheral and central innervation of the disc and spinal ligaments of the dorsal root ganglion, spinal thalamic tracts, periaqueductal gray areas innervating the Thalamus and multiple regions of the brain. The efferent neurological distribution to disparate areas of the spine to create homeostasis until tetanus ensues creating osseous changes*

*under the effect of Wolff's Law.* Academy of Chiropractic, Post-Doctoral Division, Cleveland University-Kansas City, College of Chiropractic, Long Island, NY, 2019

**Electrodiagnostic: Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis &**

**Interpretation: Anatomy and Physiology of Electrodiagnostic:** *An in-depth review of basic neuro-anatomy and physiology dermatomes and myotomes to both the upper and lower extremities and the neurophysiology of axons and dendrites along with the myelin and function of saltatory for conduction. The sodium and potassium pump's function in action potentials.* Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019

**Electrodiagnostic: Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis &**

**Interpretation: Nerve Conduction Velocity (NCV) Part 1:** *Nerve conduction velocity testing, the equipment required and the specifics of motor and sensory testing. This section covers the motor and sensory NCV procedures and interpretation including latency, amplitude (CMAP) physiology and interpretation including the understanding of the various nuances of the wave forms.* Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019

**Electrodiagnostics: Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis &**

**Interpretation: Nerve Conduction Velocity (NCV) Part 2:** *Compound motor action potentials (CMAP) and sensory nerve action potentials (SNAP) testing and interpretation including the analysis and diagnosis of the wave forms. It also covers compressive neuropathies of the median, ulnar and posterior tibial nerves; known as carpal tunnel, cubital tunnel and tarsal tunnel syndromes. This section offers interpretation algorithms to help understand the neurodiagnostic conclusions.* Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019

**Electrodiagnostics: Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis &**

**Interpretation: Needle Electromyogram (EMG) Studies:** *The EMG process, inclusive of how the test is performed and the steps required in planning and electromyographic study. This covers the spontaneous activity of a motor unit action potential, positive sharp waves and fibrillations. The insertional activity (both normal and abnormal), recruitment activity in a broad polyphasic presentation and satellite potentials. This covers the diagnosing of patterns of motor unit abnormalities including neuropathic demyelinated neuropathies along with acute myopathic neuropathies. This section also covers the ruling out of false positive and false negative results.* Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019

**Electrodiagnostics: Electromyogram/Nerve Conduction Velocity (EMG/NCV), Diagnosis &**

**Interpretation: Overview of EMG and NCV Procedures, Results, Diagnoses and Documentation.** *The clinical incorporation of electrodiagnostic studies as part of a care plan where neuropathology is suspected. It also covers how to use electrodiagnostics in a collaborative environment between the chiropractor as the primary spine care provider and the surgeon, when clinically indicated. This section covers sample cases and health conclude and accurate treatment plans based upon electro-neurodiagnostic findings when clinically indicated.* Cleveland University, Kansas City, Academy of Chiropractic, Post-Doctoral Division, Long Island, NY, 2019

**Stroke Anatomy and Physiology: Brain Vascular Anatomy,** *the anatomy and physiology of the brain and how blood perfusion affects brain function. A detailed analysis of the blood supply to the brain and the physiology of ischemia.* Cleveland University – Kansas City, ACCME Joint Providership with the State



University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**Stroke Anatomy and Physiology: Stroke Types and Blood Flow**, *Various types of stroke identifying ischemia, hypoperfusion, infarct and penumbra zones and emboli. Cardiac etiologies and clinical features as precursor to stroke with associated paradoxical emboli and thrombotic etiologies. Historical and co-morbidities that have etiology instroke inclusive of diabetes, coagulopathy, acquired and hereditary deficiencies.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**Stroke Principles of Treatment an Overview for the Primary Care Provider**, *Stroke type and treatments performed by vascular specialists. The goals of treatment with the physiology of the infarct and penumbra zones and the role of immediate triage in the primary care setting. Detailing the complications of stroke and future care in the chiropractic, primary care or manual medicine clinical setting.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**Clinical Evaluation and Protocols for Identifying Stroke Risk**, *The neurological history and examination for identifying stroke risks with a focus on supra and infratentorial regions, upper and lower motor lesions, cranial nerve signs, spinal cord pathology, motor and sensory pathology and gait abnormalities. Examining genetic and family histories along with dissection risk factors. Stroke orthopedic testing and clinical guidelines pertaining to triage for the primary care provider.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**Orthopaedic Testing: Principles, Clinical Application and Triage**, *Integration of orthopedic testing in the clinical setting to develop a differential diagnosis. Utilizing radiographic and advanced imaging inclusive of MRI and CAT scan findings to verify tissue pathology suspected by orthopedic testing conclusions and developing a treatment plan as sequelae.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**Orthopedic Testing: Cervical Spine**, *Integration of cervical orthopedic testing in the clinical setting to develop a differential diagnosis. Utilizing radiographic and advanced imaging inclusive of MRI and CAT scan findings to verify tissue pathology suspected by orthopedic testing conclusions and developing a treatment plan as sequelae.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**Orthopedic Testing: Cervical Spine Part 2**, *Integration of cervical orthopedic testing in the clinical setting to develop a differential diagnosis. Utilizing radiographic and advanced imaging inclusive of MRI and CAT scan findings to verify tissue pathology suspected by orthopedic testing conclusions and developing a treatment plan as sequelae.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**Orthopedic Testing: Lumbar Spine,** *Integration of lumbar orthopedic testing in the clinical setting to develop a differential diagnosis. Utilizing radiographic and advanced imaging inclusive of MRI and CAT scan findings to verify tissue pathology suspected by orthopedic testing conclusions and developing a treatment plan as sequelae.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**Orthopedic Testing:** Clinical Grand Rounds, how to integrate orthopedic testing in the clinical setting utilizing both simple and complex patient scenarios. It includes potential stroke, or vertebrobasilar insufficient patients and understanding the nuances in a clinical evaluation with orthopedic testing as a critical part of the evaluation and screening process. Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**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 reimbursers' requirements for complete documentation. Cleveland University – Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2019

**Mild Traumatic Brain Injury/Traumatic Brain Injury/Concussion,** *differentially diagnosing mild traumatic brain injury vs. traumatic brain injury and the clinical and imaging protocols required to conclude an accurate diagnosis for head trauma.* Cleveland University – Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2019

**Accident Reconstruction: Terms, Concepts and Definitions,** *The forces in physics that prevail in accidents to cause bodily injury. Quantifying the force coefficients of vehicle mass and force vectors that can be translated to the occupant and subsequently cause serious injury.* Cleveland University – Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2019

**Accident Reconstruction: Causality, Bodily Injury, Negative Acceleration Forces, Crumple Zones and Critical Documentation,** *Factors that cause negative acceleration to zero and the subsequent forces created for the vehicle that get translated to the occupant. Understanding critical documentation of hospitals, ambulance reports, doctors and the legal profession in reconstructing an accident.* Cleveland University – Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2019

**Accident Reconstruction: Skid Marks, Time, Distance, Velocity, Speed Formulas and Road Surfaces,** *the mathematical calculations necessary utilizing time, distance, speed, coefficients of friction and acceleration in reconstructing an accident. The application of the critical documentation acquired from an accident site.* Cleveland University – Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2019

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

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

**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. Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**Spinal Trauma Pathology, Triage and Connective Tissue Injuries and Wound Repair,** *Triaging the injured and differentially diagnosing both the primary and secondary complaints. Connective tissue injuries and wound repair morphology focusing on the aberrant tissue replacement and permanency prognosis potential.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2019

**Spinal Trauma Pathology, Ligament Anatomy and Injury Research and Spinal Kinematics,** *Spinal ligamentous anatomy and research focusing on wound repair, future negative sequelae of abnormal tissue replacement and the resultant aberrant kinematics and spinal biomechanics of the spine.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2019

**Spinal Trauma Pathology, Spinal Biomechanics, Central Nervous System and Spinal Disc Nomenclature,** *the application of spinal biomechanical engineering models in trauma and the negative sequelae it has on the central nervous system inclusive of the lateral horn, periaqueductal grey matter, thalamus and cortices involvement.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2019

**Spinal Trauma Pathology, Biomechanics of Traumatic Disc Bulge and Age Dating Herniated Disc Pathology,** *The biomechanics of traumatic disc bulges as sequelae from trauma and the comorbidity of ligamentous pathology. Age-dating spinal disc pathology in accordance with Wolff's Law.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2019

**Spinal Trauma Pathology, Clinical Grand Rounds,** *The review of case histories of mechanical spine pathology and biomechanical failures inclusive of case histories, clinical findings and x-ray and advanced imaging studies. Assessing comorbidities in the triage and prognosis of the injured.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2019

**Spinal Trauma Pathology, Research Perspectives,** *The review of current literature standards in spinal trauma pathology and documentation review of biomechanical failure, ligamentous failure and age-dating disc pathology.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2019

**Spinal Biomechanical Engineering: Cartesian System,** *The Cartesian Coordinate System from the history to the application in the human body. Explanation of the x, y and z axes in both translation and rotations (thetas) and how they are applicable to human biomechanics.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**Spinal Biomechanical Engineering: Cervical** *Pathobiomechanics, Spinal biomechanical engineering of the cervical and upper thoracic spine. This includes the normal and pathobiomechanical movement of both the anterior and posterior motor units and normal function and relationship of the intrinsic musculature to those motor units. Nomenclature in reporting normal and pathobiomechanical findings of the spine.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**Spinal Biomechanical Engineering: Lumbar Pathobiomechanics,** *Spinal biomechanical engineering of the lumbar spine. This includes the normal and pathobiomechanical movement of both the anterior and posterior motor units and normal function and relationship of the intrinsic musculature to those motor units. Nomenclature in reporting normal and pathobiomechanical findings of the spine.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**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.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**Spinal Biomechanical Engineering & Organizational Analysis,** *Integrating spinal biomechanics and pathobiomechanics through digitized analysis. The comparison of organized versus disorganized compensation with regional and global compensation. Correlation of the vestibular, ocular and proprioceptive neurological integration in the righting reflex as evidenced in imaging. Digital and numerical algorithm in analyzing a spine.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**Spinal Biomechanical Engineering: Cervical Digital Analysis,** *Digitizing and analyzing the cervical spine in neutral, flexion and extension views to diagnose pathobiomechanics. This includes alteration of motion segment integrity (AMOSI) in both angular and translational movement. Ligament instability/failure/pathology are identified all using numerical values and models. Review of case studies to analyze pathobiomechanics using a computerized/numerical algorithm.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**Spinal Biomechanical Engineering: Lumbar Digital Analysis,** *Digitalizing and analyzing the lumbar spine images to diagnose pathobiomechanics. This includes anterior and posterior vertebral body elements in rotational analysis with neutral, left and right lateral bending in conjunction with gate analysis. Ligament instability/failure/pathology is identified all using numerical values and models. Review of case studies for analysis of pathobiomechanics using a computerized/numerical algorithm along with corrective guidelines.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**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.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**MRI History and Physics,** *Magnetic fields, T1 and T2 relaxations, nuclear spins, phase encoding, spin echo, T1 and T2 contrast, magnetic properties of metals and the historical perspective of the creation of NMR and MRI.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**MRI Spinal Anatomy and Protocols,** *Normal anatomy of axial and sagittal views utilizing T1, T2, 3D gradient and STIR sequences of imaging. Standardized and desired protocols in views and sequencing of MRI examination to create an accurate diagnosis in MRI.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**MRI Disc Pathology and Spinal Stenosis,** *MRI interpretation of bulged, herniated, protruded, extruded, sequestered and fragmented disc pathologies in etiology and neurological sequelae in relationship to the spinal cord and spinal nerve roots.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**MRI Spinal Pathology,** *MRI interpretation of bone, intradural, extradural, cord and neural sleeve lesions. Tuberculosis, drop lesions, metastasis, ependymoma, schwannoma and numerous other spinal related*

*tumors and lesions.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**MRI Methodology of Analysis**, *MRI interpretation sequencing of the cervical, thoracic and lumbar spine inclusive of T1, T2, STIR and 3D gradient studies to ensure the accurate diagnosis of the region visualized.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**MRI Clinical Application**, *The clinical application of the results of space occupying lesions. Disc and tumor pathologies and the clinical indications of manual and adjustive therapies in the patient with spinal nerve root and spinal cord insult as sequelae.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**MRI Protocols Clinical Necessity**, *MRI slices, views, T1, T2, STIR axial, stacking, FFE, FSE and sagittal images. Clinical indication for the utilization of MRI and pathologies of disc in both trauma and non-trauma sequelae, including bulge, herniation, protrusion, extrusion and sequestration.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**MRI Interpretation of Lumbar Degeneration/Bulges**, *MRI slices, views, T1, T2, STIR axial, stacking, FFE, FSE and sagittal images in the interpretation of lumbar degeneration. With the co-morbidities and complications of stenosis, pseudo-protrusions, cantilevered vertebrate, Schmorl's nodes and herniations. Central canal and cauda equina compromise interpretation with management.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**MRI Interpretation of Lumbar Herniations**, *MRI slices, views, T1, T2, STIR axial, stacking, FFE, FSE and sagittal images in the interpretation of lumbar herniations. With the co-morbidities and complications of stenosis, pseudo-protrusions, cantilevered vertebrate, Schmorl's nodes and herniations. Morphology of lumbar disc pathologies of central and lateral herniations, protrusions, extrusions, sequestration, focal and broad based herniations are defined and illustrated. Central canal and cauda equina compromise interpretation with management.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**MRI Interpretation of Cervical Degeneration/Bulges**, *MRI slices, views, T1, T2, STIR axial, stacking, FFE, FSE and sagittal images in the interpretation of cervical degeneration. With the co-morbidities and complications of stenosis, pseudo-protrusions, cantilevered vertebrate, Schmorl's nodes and herniations. Spinal cord and canal compromise interpretation with management.* Cleveland University – Kansas City,

ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**MRI Interpretation of Cervical Herniations**, *MRI slices, views, T1, T2, STIR Axial, FFE, FSE and sagittal images in the interpretation of lumbar herniations. With the co-morbidities and complications of stenosis, pseudo-protrusions, cantilevered vertebrate, Schmorl's nodes and herniations. morphology of lumbar disc pathologies of central and lateral herniations, protrusions, extrusions, sequestration, focal and broad based herniations are defined and illustrated. Spinal cord and canal compromise interpretation with management.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**MRI Interpretation of Degenerative Spine and Disc Disease with Overlapping Traumatic Insult to Both Spine and Disc**, *MRI slices, views, T1, T2, STIR Axial, FFE, FSE and sagittal images in the interpretation of degenerative spondylolisthesis, spinal canal stenosis, Modic type 3 changes, central herniations, extrusions, compressions, nerve root compressions, advanced spurring and thecal sac involvement from an orthopedic, emergency room, chiropractic, neurological, neurosurgical, physical medicine perspective.* Cleveland University – Kansas City, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2019

**Documenting & Credentials in Collaborative Health Care**, *History, past history, risk factors and review of systems in developing a differential diagnosis. The clinical correlation of clinical evaluation, advanced imaging and necessary electrodiagnosis in concluding and accurate diagnosis, prognosis and treatment plan and indications for collaborative care, Academy of Chiropractic, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University, Kansas City Chiropractic and Health Sciences, 2019*

**Documentation, Carrier Mandates and How the Guide ER and Lawyer Referrals**, *Documenting electrodiagnostics, concussion and disc pathology as reflective of clinical findings when collaborating with medical specialists in private practice and hospital settings or in the medical-legal arena. Ensuring complete documentation in the evaluation and management process for both the initial and re-evaluation processes.* Cleveland University – Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2019

**Clinical Topics**, *Covering various clinical topics of Activator Methods, including Caregiving after knee replacement, additional tests for knees, pelvis, sacrum and lumbar spine. Additional tests for thoracic spine, thorax and ribs, and additional tests for the cervical spine.* Activator Methods International, Portland, OR, 2019

**Changing the Conversation about Pain**, *Discussion of the current opioid crisis, biological, psychological and social components of Pain Management.* Oregon Chiropractic Association, Portland, OR, 2019

**Minimizing Medicare Risks for Peace of Mine**, *Discussion of Medicare documentation and coding issues related to compliance.* Oregon Chiropractic Association, Portland, OR, 2019

**The Established Patient Evaluation:** Who What, When and How, *Discussion of producing compliant established patient evaluations.* Oregon Chiropractic Association, Portland, OR, 2019

**Scoliosis and Kyphosis for Chiropractors,** *Discussion of new bracing and appliances used to treat scoliosis.* Oregon Chiropractic Association Annual Winter Convention, Portland, OR, 2019

**Breakthroughs in Treating Concussion,** *Discussion of new evaluation and treatment options in the treatment of Concussion.* Oregon Chiropractic Association Annual Winter Convention, Portland, OR, 2019

**Advances in Neurology for Chiropractors,** *Discussion of new testing procedures and clinical applications in the field of Neuroscience and Neurology.* Oregon Chiropractic Association Annual Winter Convention, Portland, OR, 2019

**Understanding Traumatic Brain Injuries,** *Discussion of the most recent advances in testing and evaluation of TBI.* OCA Annual Winter Convention, Portland, OR, 2019

**Treating MVA and TBI,** *Discussion of the most recent advancements in the treatment of TBI.* Oregon Chiropractic Association Annual Winter Convention, Portland, OR, 2019

**Laser Neurology and Performance,** *Discussion of laser application in treating the brain and neurological systems.* Oregon Chiropractic Association Annual Winter Convention, Portland, OR, 2019

**Building a High-Performance Practice with Laser Integrated Therapy,** *Discussion of Laser applications and integrative protocols to build a high performing practice.* Erchonia Corporation, Dallas, TX, 2018

Robert Silverman **Concussion Workshop,** *Understanding MTBI research and studies, Understanding Nutritional roles in concussion, Rehabilitation methods and modalities, Laser protocols for concussion.* Erchonia Corporation, Vancouver, WA, 2018

**Atlas Orthogonal Advanced Seminar,** *Advanced training and topics related to the Atlas Orthogonal Adjusting Technique, including new concepts in table placement and X-Ray analysis.* The Roy W Sweat Institute and Sherman College of Chiropractic, Seattle, WA, 2018

**Connective Tissue Pathology, Spinal Biomechanics as Sequella to Trauma,** MRI Spine Interpretation, Ordering Protocols & Triaging the Injure, *The latest research on the 6 ways to age-date disc herniations and bulges from trauma inclusive of disc pathology nomenclature. **MRI Ordering Protocols,** inclusive of Dixon format and fat-suppressed images. The neurology and pathology of connective tissue and the sequella of trauma at the biomechanical level leading to bio-neuro-mechanical failure. Contemporary "evidenced-based building blocks" for triaging and in a collaborative environment.* Cleveland University Kansas City, Chiropractic and Health Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2018



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

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

**Documentation, Collaboration, and Primary Spine Care**, *An academic basis for documentation that is usual and customary across professions in collaborative care. Maintaining ethical medical-legal relationships based upon Voir Dire and Daubert standards with ensuring a "4-corners" inclusive report. Ensuring Primary Care Status based upon an academic standards*. Cleveland University Kansas City, Chiropractic and Health Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2018

**Documenting Trauma and Non-Trauma Cases & Triaging Disc Pathology**, *Triage, care and collaboration for herniated, bulged, protruded, extruded and fragmented spinal discs. Compliant documentation of evaluation and management of new and established patients inclusive of chief complaint, history of present illness, review of systems, past-family-social histories with case management protocols and the required elements. Clinically coordinating treatment with subjective complaints, clinical findings and diagnosis for each encounter*. Cleveland University-Kansas City Chiropractic and Health Sciences, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2018

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

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

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

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

**Neurodiagnostic Testing Protocols, Physiology and Indications for the Trauma Patient**, *Electromyography (EMG), Nerve Conduction Velocity (NCV), Somato Sensory Evoked Potential (SSEP), Visual Evoked Potential (VEP), Brain Stem Auditory Evoked Potential (BAER) and Visual- Electronystagmosgraphy (V-ENG) interpretation, protocols and clinical indications for the trauma patient.* Cleveland University – Kansas City, Academy of Chiropractic Post-Doctoral Division, Long Island, NY, 2018

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

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

Clinical Topics, **Advanced testing and adjusting methods for the pelvis and spine**. Activator Methods International, Portland, OR, 2018

**Case Studies in Neurology**, *Resolution and treatment plan for various difficult neurological cases.* Oregon Chiropractic Association, Portland, OR 2018

**The Vitality Shift – Moving the World Past Pain**, *Chiropractic Alternative treatments for pain management.* Oregon Chiropractic Association, Portland, OR, 2018

**Through CDC**, *Addressing Concussions in Sports, Introductory course on evaluation and treatment of sports related concussion.* Oregon Chiropractic Association, Portland, OR, 2018

**Evidence Based Outcomes and Assessments**, *Introductory course exploring the use of research articles in clinical practice.* Oregon Chiropractic Association, Portland, OR, 2018

**Over the Counter Medications**, *Review of common over the counter medication uses and side effects.* Oregon Chiropractic Association, Portland, OR, 2018

**Atlas Orthogonal Master Mind Alliance**, *Discussion of pediatric patient care, Elderly patient care, with instruction in best business practices in relation to the Atlas Orthogonal Technique.* Jeffrey Finnigan, Bend, OR, 2018

**Back in Balance, Basic Functional Neurology and Laser Applications**, *Laser applications from a functional neurology perspective, with basic instruction in aberrant neurological pathways and how to address with low level light therapy.* Erchonia Corporation, Portland, OR, 2018

**Removing the Fear from Compliance and Renewing** Passion for Service, *Discussion of common HIPPA related compliance issues.* OCA Annual Winter Conference, Portland, OR, 2018

**Neurology Case Studies**, *Six presenters with a variety of case studies and their solution from a Functional Neurology treatment plan and perspective.* Oregon Chiropractic Association, Annual Winter Conference, Portland, OR, 2018

**The Opioid Crisis and The Chiropractic Alternative**, *Strategies to be able to address the current opioid crisis and the mechanism of chiropractic adjustment provides to relieve pain naturally.* Oregon Chiropractic Association Annual Winter Conference, Portland, OR, 2018

**Evidence Based Certainty** – The Foundation for Success, *Instruction in the most current methods of research and application to chiropractic profession.* Oregon Chiropractic Association Annual Winter Conference, Portland, OR, 2018

**Extremity Adjusting**, *Advanced extremity adjusting tests and technique, covering the lower extremity (hip knee, foot and ankle), and upper extremity (Shoulder, Elbow, Wrist, Hand). Includes grand rounds workshop and clinical proficiency testing.* **Activator Methods** International, Portland, OR, 2017

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

**Primary Spine Care – MRI, Bone Edema and Degeneration**, *The effects of trauma on spinal vertebral segments and the short and long term sequella to morphology. Identifying and diagnosing bone edema, spurring, types of degeneration in assessing biomechanical stability in conjunction with Modic and Pfeiffer changes* Texas Chiropractic College, Academy of Chiropractic, Academy of Chiropractic, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Melville, NY, 2016

**Primary Spine Care – Hospital and Emergency Room Care**, *identifying spinal lesions inclusive of cord and root lesion through examination and advanced imaging in creating an accurate diagnosis, prognosis and treatment plan to effectively triage in collaboration and coordination with medical specialists and emergency department physicians. Differentially diagnosing and triaging disc degenerative bulges,*

*traumatic disc bulges, protrusion herniations, extrusion herniations and fragmented herniations along with managing traumatically induced pain as sequella to degenerative disc trauma, Texas Chiropractic College, Academy of Chiropractic, Academy of Chiropractic, Recognized by the PACE Program of the Federation of Chiropractic Licensing Boards, Melville, NY, 2016*

**Advanced Instrument Rating**, *Advanced class featuring demonstrations of focused clinical problem solving emphasizing advanced tests and adjustments for the spine and extremities. Also includes overviews on a broad range of clinical topics relevant to chiropractors based on the recently published evidence and research. Topics range from diagnostic challenges in the older patient to dose-response and efficacy of chiropractic care for patients experiencing back pain, neck pain, or radiating extremity pain.* Activator Methods International, Portland, OR, 2016

**Atlas Orthogonal Board Certification Advanced Course IV**, *Advanced training in evaluation and treatment of the upper cervical misalignment and trauma, including preparation for Board Certification in Atlas Orthogonal upper cervical.* R.W. Sweat clinic, Atlanta, GA, 2015

**Atlas Orthogonal Board Certification Advanced Course III**, *Advanced training in evaluation and treatment of the upper cervical misalignment and trauma, including preparation for Board Certification in Atlas Orthogonal upper cervical.* R.W. Sweat Clinic, Atlanta, GA, 2015

**Upper Cervical, Brachial, and Lumbar Dissection**, *Live cadaver dissection of Cervical and Lumbar spinal, muscular and neural structures as a prerequisite for Atlas Orthogonal board certification.* Life University, Atlanta, GA, 2015

**Atlas Orthogonal Board Certification Advanced Course II**, *Advanced training in evaluation and treatment of the upper cervical misalignment and trauma, including preparation for Board Certification in Atlas Orthogonal upper cervical.* R.W. Sweat Clinic, Atlanta, GA, 2014

**Atlas Orthogonal Board Certification Advanced Course I**, *Advanced training in evaluation and treatment of the upper cervical misalignment and trauma, including preparation for Board Certification in Atlas Orthogonal upper cervical.* R.W. Sweat Clinic, Atlanta, GA, 2014

**Basic Instrument Rating**, *Introduction to Activator Methods basic concepts, including identification of the PD leg, types of testing and possibilities, as well as all basic scans of the spine and extremities.* Activator Methods International, Chicago, IL, 2014

**Atlas Orthogonal Basic Course IV**, *Review of basic protocols, Xray position and analysis, and treatment of the upper cervical misalignment complex.* Davenport, IA, 2014

**Atlas Orthogonal Basic Course III**, *Review of basic protocols, Xray position and analysis, and treatment of the upper cervical misalignment complex.* Davenport, IA, 2014

**Atlas Orthogonal Basic Course II**, *Review of basic protocols, Xray position and analysis, and treatment of the upper cervical misalignment complex.* Davenport, IA, 2013

**Atlas Orthogonal Basic Course I**, *Review of basic protocols, Xray position and analysis, and treatment of the upper cervical misalignment complex.* Davenport, IA, 2013

**National Spine Management Conference South – Basic Spinal Biomechanical Modeling** – *Basic spinal biomechanical principles will be reviewed including sagittal spinal alignment and coronal positioning in relation to the spinal facet joints. Research trends including symptomatic vs asymptomatic spinal parameters will be presented in the context of the Doctor of Chiropractic as the portal of entry spine care provider.*