

# **Curriculum Vitae**

## **Rick Junnila, D.C., D.A.A.P.M.**

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### **POST-GRACUATE EDUCATION OVERVIEW**

Doctor of Chiropractic

Former Director Manual & Physical Medicine, Sutter Occupational Health

Certified Spinal Trauma

Category 1, AMA Instructor, Spinal MRI

Certified Spinal MRI Interpretation

Certified Spinal Biomechanical Engineering

Certified Accident Reconstruction

Diplomat American Academy of Pain Management

Chiropractic Orthopedic and Neurological Rehabilitation

Industrial Medical Evaluator

Certified Manipulation Under Anesthesia

Certified X-Ray Proficiency

### **SELECTED OCCUPATIONAL HISTORY**

Owner, LifeStyle Health & Fitness Center, Oakley, CA, 2006 – Present

Director Manual and Physical Medicine, Sutter Occupational Health, Oakland, CA, 1999 – 2006

CEO, Castro Valley Medical Center, Castro Valley, CA, 1997 – 1999

Director Manual and Physical Medicine, Focused Rehab, Castro Valley, CA, 1994 – 1997

Owner-Partner, Delta Spine & Sportcare, Brentwood, CA, 1992 – 1994

Exam Doctor Rehabilitation Assistant, Dan Murphy, DC, DACBO, Pleasanton, CA, 1991 – 1993

Physical Therapy Aide, Institute for Physical Medicine, Pleasanton, CA, 1989 – 1991

## **EDUCATION AND LICENSURE**

Doctor of Chiropractic, Licensed in the State of California, License # 22554, 1992

X-Ray Supervisor and Operator Licensed

Doctorate of Chiropractic, Life Chiropractic College West, Hayward, California, 1992

Internship, Life Chiropractic College, Hayward, California

## **POST-GRADUATE EDUCATION**

**Spinal trauma pathology, Research and documentation Review**, Spinal Trauma Pathology, Research Perspectives, *The review of current literature standards in spinal trauma pathology and documentation review of biomechanical failure, ligamentous failure and age-dating disc pathology*. Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2018

**Spinal trauma pathology, clinical grand rounds**, *Spinal Trauma Pathology, Clinical Grand Rounds, The review of case histories of mechanical spine pathology and biomechanical failures inclusive of case histories, clinical findings and x-ray and advanced imaging studies. Assessing comorbidities in the triage and prognosis of the injured*. Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2018

**Biomechanics of Traumatic Disc Bulge and Age Dating Herniated Disc Pathology**, 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*. Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2018

**Spinal Biomechanics, Central Nervous System and Spinal Disc Nomenclature**, *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*. Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2018

**Stroke Anatomy and Physiology Part 1**, *Stroke Anatomy and Physiology: Brain Vascular Anatomy, The anatomy and physiology of the brain and how blood perfusion effects brain function. A detailed analysis*

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

**Stroke Anatomy and Physiology Part 2,** *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, 2018

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

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

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

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

**Cervical Spine Part 2 Orthopedic Testing:** *Cervical Spine, Integration of cervical orthopedic testing in the clinical setting to develop a differential diagnosis. Utilizing radiographic and advanced imaging inclusive of MRI and CAT scan findings to verify tissue pathology suspected by orthopedic testing conclusions and developing a treatment plan as sequelae.* Cleveland University – Kansas City, ACCME Joint Providership

with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2018

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

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

**Ligament anatomy and injury research and spinal kinematics,** *Spinal Trauma Pathology, Ligament Anatomy and Injury Research and Spinal Kinematics, Spinal ligamentous anatomy and research focusing on wound repair, future negative sequelae of abnormal tissue replacement and the resultant aberrant kinematics and spinal biomechanics of the spine.* Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2018

**Diagnostic dilemmas and connective tissue Morphology,** *Spinal Trauma Pathology, Triage and Connective Tissue Injuries and Wound Repair, Triaging the injured and differentially diagnosing both the primary and secondary complaints. Connective tissue injuries and wound repair morphology focusing on the aberrant tissue replacement and permanency prognosis potential.* Texas Chiropractic College, ACCME Joint Providership with the State University of New York at Buffalo Jacobs School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, New York, 2018

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

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

**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 sequela. 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, PACE Approved for the Federation of Chiropractic Licensing Boards, Cleveland University- Kansas City, College of Chiropractic, Long Island NY 2018

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

**Mild Traumatic Brain Injury, Traumatic Brain Injury and Concussion,** *Deferentially diagnosing mild traumatic brain injury vs. traumatic brain injury and the clinical and imaging protocols required to conclude an accurate diagnosis for head trauma. [Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards]*, Academy of Chiropractic Post Doctoral Division, Long Island, NY, 2017

**Accident Reconstruction, Terms, Concepts & Definitions:** *The forces in physics that prevail in accidents to cause bodily injury. Quantifying the force coefficients of vehicle mass and force vectors that can be translated to the occupant and subsequently cause serious injury. [Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards]*, Academy of Chiropractic Post Doctoral Division, Long Island, NY, 2017

**Accident Reconstruction: Causality, Bodily Injury, Negative Acceleration Forces, Crumple Zones and Critical Documentation,** *Factors that cause negative acceleration to zero and the subsequent forces created for the vehicle that get translated to the occupant. Understanding critical documentation of hospitals, ambulance reports, doctors and the legal profession in reconstructing an accident. [Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards]*, Academy of Chiropractic Post Doctoral Division, Long Island, NY, 2017

**Accident Reconstruction: Skid Marks, Time, Distance, Velocity, Speed Formulas and Road Surfaces,** *The mathematical calculations necessary utilizing time, distance, speed, coefficients of friction and acceleration in reconstructing an accident. The application of the critical documentation acquired from an accident site. [Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards]*, Academy of Chiropractic Post Doctoral Division, Long Island, NY, 2017

**Accident Reconstruction: Research, Causality and Bodily Injury,** *Delta V issues correlated to injury and mortality, side impact crashes and severity of injuries, event data recorder reports correlated to injury, frontal impact kinematics, crash injury metrics with many variables and inquiries related to head restraints. [Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards]*, Academy of Chiropractic Post Doctoral Division, Long Island, NY, 2017

**Accident Reconstruction: Skid Marks, Time, Distance, Velocity, Speed Formulas and Road Surfaces,** *The mathematical calculations necessary utilizing time, distance, speed, coefficients of friction and*

*acceleration in reconstructing an accident. The application of the critical documentation acquired from an accident site. [Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards], Academy of Chiropractic Post Doctoral Division, Long Island, NY, 2017*

**Accident Reconstruction: Research, Causality and Bodily Injury**, *Delta V issues correlated to injury and mortality, side impact crashes and severity of injuries, event data recorder reports correlated to injury, frontal impact kinematics, crash injury metrics with many variables and inquiries related to head restraints. [Texas Chiropractic College or PACE Recognized by The Federation of Chiropractic Licensing Boards], Academy of Chiropractic Post Doctoral Division, Long Island, NY, 2017*

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

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

**MRI Physics and History**, *Magnetic fields, T1 and T2 relaxations, nuclear spins, phase encoding, spin echo, T1 and T2 contrast, magnetic properties of metals and the historical perspective of the creation of NMR and MRI. Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015*

**MRI Normal Anatomy and Protocols**, *Spinal anatomy of all MRI views utilizing T1, T2, 3D Gradient, stacking and STIR sequences of imaging. Advanced protocols of MRI examination with multiple sequences to create concurrent diagnostic findings Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015*

**MRI Disc & Spinal Cord and Spinal Canal Pathology**, *MRI interpretation of spinal disc pathologies as a result of trauma and degenerative factors and resultant neurological compromise. Spinal Cord and Spinal canal pathologies and space occupying lesion interpretation. Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015*

**MRI Anatomy & History**, *Normal anatomy of axial and sagittal views utilizing T1, T2, 3D Gradient and STIR sequences of imaging. Standardized and desired protocols in views and sequencing of MRI*

*examination to create an accurate diagnosis in MRI. Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015*

**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. Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015*

**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. Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015*

**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. Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015*

**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. Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015*

**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 vertebrae, Schmorl's nodes and herniations. Spinal cord and canal compromise interpretation with management. ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2015*

**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 vertebrae, Schmorl's nodes and herniations. morphology of lumbar disc pathologies of central and lateral herniations, protrusions, extrusions, sequestration, focal and broad based herniations are defined and illustrated. Spinal cord and canal compromise interpretation with management. ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2015*

**MRI Interpretation of Degenerative Spine and Disc Disease with Overlapping Traumatic Insult to Both Spine and Disc**, *MRI slices, views, T1, T2, STIR Axial, FFE, FSE and sagittal images in the interpretation*

*of degenerative spondylolesthesis, spinal canal stenosis, Modic type 3 changes, central herniations, extrusions, compressions, nerve root compressions, advanced spurring and thecal sac involvement from an orthopedic, emergency room, chiropractic, neurological, neurosurgical, physical medicine perspective. ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2015*

**MRI Interpretation of Spinal Cord, Spinal Disc and Spinal Canal Disorders, MRI interpretation of herniated, protruded, extruded, bulged and sequestered discs & spinal stenosis as sequelae of ligamentous hypertrophy, congenital malformation, spinal cord pathology.** Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015

**MRI Interpretation of Herniated Disc and Spinal Cord and Root Encroachment, MRI interpretation of herniated, protruded, extruded, bulged and sequestered discs and their relationship to the spinal cord and spinal nerve roots and the clinical correlation to spinal adjustments, manual spinal therapy and joint mobilization.** Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015

**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.** ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2015

**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.** ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2015

**MRI Interpretation of Lumbar Herniations, MRI slices, views, T1, T2, STIR axial, stacking, FFE, FSE and sagittal images in the interpretation of lumbar herniations. With the co-morbidities and complications of stenosis, pseudo-protrusions, cantilevered vertebrate, Schmorl's nodes and herniations. Morphology of lumbar disc pathologies of central and lateral herniations, protrusions, extrusions, sequestration, focal and broad based herniations are defined and illustrated. Central canal and cauda equina compromise interpretation with management.** ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post-Doctoral Division, Buffalo, NY, 2015

**Spinal Biomechanical Engineering, Cartesian Coordinate System, Cervical Pathobiomechanics, Lumbar Pathobiomechanics, Spinal Biomechanics in Trauma, Organizational Analysis, Cervical Digital Analysis,**



*Lumbar Digital Analysis, Full Spine Digital Analysis Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015*

**Spinal Biomechanical Engineering: Cervical Pathobiomechanics**, *Spinal biomechanical engineering of the cervical and upper thoracic spine. This includes the normal and pathobiomechanical movement of both the anterior and posterior motor units and normal function and relationship of the intrinsic musculature to those motor units. Nomenclature in reporting normal and pathobiomechanical findings of the spine. ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2015*

**Spinal Biomechanical Engineering: Lumbar Pathobiomechanics**, *Spinal biomechanical engineering of the lumbar spine. This includes the normal and pathobiomechanical movement of both the anterior and posterior motor units and normal function and relationship of the intrinsic musculature to those motor units. Nomenclature in reporting normal and pathobiomechanical findings of the spine. ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2015*

**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 sequelae to pathobiomechanics from trauma. The utilization of digital motion x-ray in diagnosing normal versus abnormal facet motion along with case studies to understand the clinical application. ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2015*

**Spinal Biomechanical Engineering & Organizational Analysis**, *Integrating spinal biomechanics and pathobiomechanics through digitized analysis. The comparison of organized versus disorganized compensation with regional and global compensation. Correlation of the vestibular, ocular and proprioceptive neurological integration in the righting reflex as evidenced in imaging. Digital and numerical algorithm in analyzing a spine. ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2015*

**Spinal Biomechanical Engineering: Cervical Digital Analysis**, *Digitizing and analyzing the cervical spine in neutral, flexion and extension views to diagnose pathobiomechanics. This includes alteration of motion segment integrity (AMOSI) in both angular and translational movement. Ligament instability/failure/pathology are identified all using numerical values and models. Review of case studies to analyze pathobiomechanics using a computerized/numerical algorithm. ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2015*

**Spinal Biomechanical Engineering: Lumbar Digital Analysis**, *Digitizing and analyzing the lumbar spine images to diagnose pathobiomechanics. This includes anterior and posterior vertebral body elements in rotational analysis with neutral, left and right lateral bending in conjunction with gate analysis. Ligament instability/failure/pathology is identified all using numerical values and models. Review of case studies for analysis of pathobiomechanics using a computerized/numerical algorithm along with corrective*

*guidelines. ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2015*

**Spinal Biomechanical Engineering:** *Full Spine Digital Analysis, Digitalizing and analyzing the full spine images to diagnose pathobiomechanics as sequellae to trauma in relation to ligamentous failure and disc and vertebral pathology as sequellae. This includes anterior and posterior vertebral body elements in rotational analysis with neutral, left and right lateral bending in conjunction with gate analysis. Ligament instability/failure/pathology is identified all using numerical values and models. Review of case studies for analysis of pathobiomechanics using a computerized/numerical algorithm along with corrective guidelines. ACCME Joint Sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, Academy of Chiropractic Post Doctoral Division, Buffalo, NY, 2015*

**Laser Therapy,** *Characteristics of Laser, Laser Physics, Safety, Mechanisms of Therapy. Dose, Time and Power. Treatment Procedures, Wound Healing, Tendinopathies, Myofascial Pain, Muscular Injury, Osteoarthritis, Sports Injury and Fatigue, Tinnitus, TMJ and Other Indications Irradia, 2010*

**Hospital Protocols,** *Review of Medical Staff and Committees, Admitting Procedures and Criteria, Discharge Procedures, Medical-Surgical Records, Surgical Dictation, Differential Diagnosis, Out Patient Work-Up, X-Ray, EMG, Lab Studies, and Surgical Protocols. American Academy Manual & Physical Medicine, Doctors Hospital of New Boston, 1998*

**Manipulation Under General Anesthesia, MUA Certification:** *Review of Anesthesiologist Procedures, Indications, Contraindications, Admitting, Techniques for the Cervical, Thoracic and Lumbar Spines, Extremities, Fibrotic Tissue Stretching Techniques, Patient Safety, Discharge, Charting and Review of Literature. Certification in Manipulation Under Anesthesia, American Academy Manual & Physical Medicine, Doctors Hospital of New Boston, 1998*

**Clinical Nutrition,** *Intestinal and Systemic Detoxification, Gastrointestinal Nutrition, Liver Metabolism, Immune Function, Cardiovascular, Glucose Tolerance, Pulmonary Function, Urological Nutrients, Musculoskeletal Nutrition, Urinalysis, Fasting, Hair Analysis, Fecal Analysis, Modified Elimination Diets, etc. Certification in Clinical Nutrition, IPS, 1997*

**Industrial Disability Examiner,** *Medical History, Injury Mechanics, Employment History, Activities of Daily Living, Occupational Requirements, Reasonable and Necessary Treatment, Clinical Assessment, Review of Records, Causation, Apportionment, Disability Rating, etc. International Chiropractic Association, 1997*

**Chiropractic Rehabilitation,** *Physical Therapy Methods and Concepts: Passive Motion, Active Exercise, Strengthening Exercise, Dynamic Neuromuscular Stabilization, Soft Tissue Mobilization, Dry Needling for Muscular Fibrosis. Canadian Memorial College of Chiropractic, 1996*

**Chiropractic Rehabilitation,** *Neurophysiological Foundation of Physical Therapy Approaches: Neuroplasticity, Evolutionary Plasticity, Repair Placidity, Neuroplastic and Sensorimotor Programs, Training and Exercises, etc. Canadian Memorial College of Chiropractic, 1996*

**Chiropractic Rehabilitation, Entrapment Syndromes: Etiology, Manifestation, Pathogenesis, Treatment and Diagnosis. Entrapment of; Upper Thoracic Aperture, Scalenus, Costoclavicular, Hyper-Abduction, Supra Clavicular, Median Nerve, Ulnar Nerve, Radial Nerve, Femoral Nerve, Sciatic Nerve, Peroneal Nerve, Tibial Nerve, etc. Treatment and Rehabilitation.** Canadian Memorial College of Chiropractic, 1996

**Chiropractic Rehabilitation, Deficits in Cerebellar Function: Vestibular System Disturbances, Unilateral Vestibular Lesion, Benign Paroxysmal Positional Vertigo, Bilateral Vestibular Deficit, Deficits due to Cervical Spine, Central Balance Deficits, Vertebral Artery Syndrome, Psychogenic Vertigo. Extrapyramidal Deficits; Hypokinetic and Hyperkinetic Deficits, Bradykinesia, Akinesia, Rigidity, Tremor and Postural Deficits.** Canadian Memorial College of Chiropractic, 1996

**Chiropractic Rehabilitation, Influence of Function on Morphological Tissue Restructuring: Functional Changes in Soft Tissue, Motion Restrictions, Hypermobility, Change in Afferentation from Receptors, Motor Learning from Central Regulation, Overloading causing Tendonitis, Enthesopathy, Paratenonitis, Paratendinitis and Tenosynovitis. Post-Surgical Rehabilitation. Treatment Rehabilitation and Strategies.** Canadian Memorial College of Chiropractic, 1996

**Chiropractic Rehabilitation, Degenerative Joint Diseases: Primary OA, Secondary OA, Coxarthrosis, Gonarthrosis, Surgical Procedures, Rehabilitation following Arthroplasty. Traumatology of the Movement System; Contusion, Tendon Injury, Muscle Injury, Bone Injury Joint Injury, Treatment Options, Rehabilitation.** Canadian Memorial College of Chiropractic, 1996

**Roentgenology, Shoulder - Knee - Paraspinal Soft Tissue Findings: Shoulder Disorders, Shoulder Dislocations, Shoulder Fractures, Knee Disorders, Knee Dislocations, Knee Fractures, Abdominal Aortic Aneurysm Calcification in; Arteries, Prostate, Lymph Nodes, Gallstones, Urinary Calculi, Teratomas, Heart and Chest Studies, Pneumothorax, etc.** Life Chiropractic College West, 1995

**Roentgenology, Fractures of the Upper and Lower Extremities: Pott's Fracture, Jones, Calcaneal Fractures, Tibial Plateau, Patella, Toddler's, Fender Fractures. Radial Head Fractures, Supracondylar, Olecranon, Manteggia's, Collie's, Bennett's, Smith's, Scaphoid, Gamekeeper's Thumb, etc.** Palmer Chiropractic College, 1995

**Roentgenology, Principals of Magnetic Resonance Imaging: Tendons and Muscles: Degeneration, Tenosynovitis, Tears, Subluxation/Dislocation, Indirect and Indirect Muscle Injury, Muscle Trauma. TMJ, Shoulder, Elbow, Wrist, Hand, Hip, Knee, Foot and Spine: Normal Anatomy, Tendon, Ligament, Nerve and Bone Injury both Traumatic and Non-Traumatic** Palmer College of Chiropractic, 1995

**Roentgenology, Chest Imaging: MRIography, Scintigraphy, Bronchography, Fluoroscopy. Radiographic Signs of Chest Disease: Rosette Pattern, Silhouette Sign, Atelectasis, Interstitial Disease, Calcifications, Alterations in Lung Volume, HRTC patterns of Airway Disease, Lung Disease, Congenital Malformations, etc.** Palmer Chiropractic College, 1995

**Chiropractic Rehabilitation, Functional and Neurologic Symptomology: Postural Stability, Stabilization, Reactibility, Disturbances. Gait Cycle, Typology of Gait Dysfunctions Neurological, Examination of Postural Stabilization and Postural Reactibility. Trigger Points, Muscular Disturbances, Myotatic Reflexes, Involuntary movements, Tremor, Spasm, Clonus, Fibrillar Twitches. Chorelic and Athenoid Hyperkensesis.** Canadian Memorial College of Chiropractic, 1995

**Chiropractic Rehabilitation, Neurologic Syndromology: Myasthenia Gravis, Lambert-Eaton Myasthenic Syndrome. Peripheral Nerve Deficits. Spinal Cord: Transverse (sudden/gradual) Cord Lesions, Pseudoparetic, Spastic, Mixed Cord Lesions. Conus Medularis, Cauda Equina, Posterior Cord. Cerebellar Syndrome, Flaccidity, Hypermetria, Diadochokinesia, Extrapyramidal, Thalamic and Brain Stem Syndromes. Meningeal Irritation, Intracranial Hypotension and Ventricular Syndromes, etc.** Canadian Memorial College of Chiropractic, 1995

**Chiropractic Rehabilitation, Kinesiology and Clinical Examination of the Joint System: Kinesiology of the Spine, Thorax, Pelvis, Shoulder Girdle, Elbow Joint, Wrist, Hand, Hip, Knee, Lower leg and Foot.** Canadian Memorial College of Chiropractic, 1995

**Roentgenology, Lumbar Spine: Low Back Syndromes and their Related X-Ray Scanning Lines and Angles, Spondylolesthesis, Spondylolysis, Retrolesthesis, Block Vertabrae, Coronal and Sagittal Tropism, Lumbar Stenosis, Spina Bifida, Lumbosacral Transitional Vertebrae, Knife Clasp Deformity, Hemi and Butterfly Vertebrae, etc.** Life Chiropractic College West, 1994

**Roentgenology, Pelvic - Sacroiliac \_ Hip Roentgenology: Hip Fractures, Stenton's Line, Protrusio Acetabuli, Osteitis Condensans Ilii, Osteitis Pubis, Sacroiliac Alterations, Congenital Structural Faults, Aknalosing Spondylitis, Infections, Congenital Hip Displasia, Slipped Femoral Capital Ephysis, Osteochondrosis, etc.** Life Chiropractic College West, 1994

**Roentgenology, Cervical Spine: Whiplash Syndromes and their Related X-Ray Scanning Lines and Angles, Whiplash Syndromes, Joints of Luschka, Posterior Joint Arthrosis, Basilar Impression, Klippel-Feil Syndrome, Cervical Ribs, Twelve Indirect Signs of Cervical Spine Trauma, Cervical Fractures, etc.** Life Chiropractic College West, 1994

**Roentgenology, Primary Characteristics and Sites: Benign vs. Malignant, Infection vs. Malignant, Osteoporosis, Paget's, Target Areas of Bone Disorders** Life Chiropractic College West, CA, 1993

**Roentgenology, Bone Tumors - Benign and Malignant: Bone Tumor Characteristics - Contrast between Benign and Malignant, Neoplasms, Metastatic Carcinoma, and Sarcoma.** Life Chiropractic College West, 1993

**Roentgenology, Arthritis and Osteochondrosis: Osteoarthritis, Infective Arthritis, Inflammatory Arthritis and Gout. Non-Articular Rheumatism. Legg-Calve-Perthes', Scheuermann's disease, Traumatic Epiphysitis, Osgood Schlatter's, Sever's Disease, Kohler's, Kienbock's Disease, etc.** Life Chiropractic College West, 1993

## SCHOLARLY PRESENTATIONS

**Graduate Medical Presenter**, *An Evidenced Base Biomechanical Solution to Back and Neck Non-Specific Pain, Differentially diagnosing anatomical vs. biomechanical pathology in a patient centered context based upon an evidenced based model. The epidemiology of spinal pain and a literature based best-model for care-path for the medical primary care provider for mechanical spine pain and the potential negative sequelae of delayed care inclusive of opioid dependency, Wolff's Law of degeneration and chronic pain and the correlation of the functional anatomy of pain, 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, Brentwood CA, 2015 -Present*

Hart, J., Junnila, R. (2004). **Anesthesia Assisted Traction and Fibrosis Procedures Including Manipulation** Topics: Safety, Cost Effectiveness, MUA vs Laminectomy, Literature Review 1952-2002, Fibrosis of Repair, Techniques, Out Patient Surgical Center Protocols. presented at the CME Seminar, Sutter Occupational Health Sacramento, CA.

Junnila, R. (2001, October). **Science of Manipulation, Chiropractic's Role in Modern Healthcare** Topics Covered: The Neurophysiology of an Adjustment, Kinesiopathomechanics, Afferent and Efferent Neurophysiology, Fibrosis of Repair, Indications and Contraindications to Treatment, Disc Injury Types, Neurological Deficits, Myofascial Release, Protocols presented at the CME Seminar, Sutter Symposium, Vallejo, CA.

## SELECTED TEACHING/INSTRUCTING/LECTURING/CONSULTING

Lecturer, Treatment and Diagnosis of Spinal Injury, Spinal MRI, Spinal Biomechanics and Neurophysiological Pathways of Manipulation. Accreditation Council for Continuing Medical Education (ACCME) in joint sponsorship with the State University of New York at Buffalo, School of Medicine and Biomedical Sciences, 2015 - Present

Lecturer, Current Clinical Concepts in Chiropractic, Brentwood , CA, 2013 - Present

Lecturer, Industrial Injury Prevention, CA, 2008 - Present

Instructor, Anesthesia Assisted Traction and Fibrosis Procedures Including Manipulation, Sutter, Sacramento, CA, 2004