

**Seminars on the Functional Pathology of the Musculoskeletal System—Introduction  
A Unifying Scientific Paradigm for Manual Medicine**

**“Train the Trainers”  
A Faculty Development Workshop**

**Session A: August 15, 16, 17, and 18; 2024  
Session B September 12, 13, 14, and 15; 2024**

Presenters, table trainers, and planning committee members: William Brooks, DO, Shane Patterson, DO and Alan Yee, DO, do not have commercial relationships constituting conflicts of interest arising from the content of this “Faculty Development Workshop”.

\* Dr. Brooks

\*\* Introduced and summarized by Dr. Brooks. Trained by Drs. Patterson and Yee.

\*\*\* Drs. Patterson, Yee, and Brooks

**Session A**

***Principles; Nomenclature; Regional Axial and Appendicular Skeletal Examination***

Goal, Objectives, and Benefits of Session A

**Learning objectives - after completing Session A participants will appreciate and be able to discuss the:**

- The conceptual foundations of the FPMSS paradigm
- Revised definition of somatic dysfunction
- Principles of scientific nomenclature for FPMSS
- Basic principles of musculoskeletal function
- General principles of evaluation for MSS dysfunction

**And will be able to:** competently examine the regional axial and the appendicular skeleton, describing findings in accord with FPMSS nomenclature and principles; and explore the examination in their clinical practice

***Required reading prior to Session A***

***Forward  
Preface  
Chapter 1  
Chapter 2***

**Learning objectives - after reading participants will appreciate and be able to discuss:**

- Conceptual Foundations of Science
  - Science: types of validity; reliability; precision; accuracy; error
  - Criteria for construct validity
- Conceptual Foundations of Biology
  - Structural pathology vs. functional pathology
    - An analogy: computer hardware and software
    - Two muscular organ systems: CVS and MSS
  - Systems theory vs. reductionism: the musculoskeletal system—an integrated organ system
    - Component organs
    - Integrating mechanisms of the MSS
    - Emergent properties

Thursday August 15, 2024

8:45—Noon

Break ~ 10:00—10:15

Welcome—Introductions

I. Overview of the Workshop \*

- Rationale: the scientific verification of OMM (and manual medicine more broadly) is weak, and the full potential of OMM untapped
- Central theme: improve patient care through a new, more scientific, paradigm portending more robust explanation and prediction
- Goal / benefits: improved patient care in both primary and specialty settings; more cogent education; more fruitful research
- Spirit
  - Scientific community—obligation to critically and creatively evaluate ideas: to problem solve
  - A focus group toward improving future seminars and related educational processes

II. Conceptual Foundations \*

**Learning objective - participants will appreciate and be able to discuss the conceptual foundations of the FPMSS paradigm:**

**DEMONSTRATION #1: remote effects of successful treatment of primary dysfunctions \*\*\***

- Conceptual Foundations of Science
  - Discussion of required reading

**MINI-LAB# 1: squat \*\***

**MINI-LAB# 2: seated forward bending of the straight pedal appendage at the hip \*\***

**MINI-LAB# 3: standing progressive segmental pan-spinal and pelvic forward bending \*\***

- Causation
  - Categories
  - Fallacy of the single cause (contextual)
- Conceptual Foundations of Biology
  - Organization of biological phenomena
  - Health
    - Economy
    - Homeostasis
    - Allostasis: reserve capacity
  - Organization of biomedical sciences
    - The problem of “functional anatomy”

**MINI-LAB# 4: ulna spins \*\***

**MINI-LAB# 5: “sub-talar joint” motion \*\***

- Type I and II spinal dysfunction

III. Critique and Revision of Historical Definition of “Somatic Dysfunction—Part #1 \*

**Learning objective - participants will appreciate and be able to discuss a revised definition of somatic dysfunction:**

- Historical
  - ICD Definition
  - TART

- Affirmative definition of somatic dysfunction: healthy (“optimal”) function
  - “Economical and, thus, efficient”
- Whole body mechanics

#### IV. Principles of Nomenclature \*

**Learning objective - participants will appreciate and be able to discuss a scientifically valid nomenclature for FPMSS:**

- Words matter!
  - Criteria for scientific validity
  - Data interpretation: within and between practitioners and professions
- Statics vs dynamics
  - **MINI-LAB #6: straight versus bent finger \*\***
    - “Structural/Postural” model: “STRUCTURAL exam” vs “somatic DYSFUNCTION”
    - Discriminate morphology, posture, and movement
- Required basic changes
  - #1 Earth-centric vs body-centric: spatial terminology of the body
    - **DEMONSTRATION #2: spatial terminology \***
      - #2 Earth-centric vs body-centric: motion “AT” not “OF” a joint
    - **MINI-LAB #8: “knee abduction”; “hip abduction”; “knee flexion” \*\***
      - **DEMONSTRATION #3: iliosacral vs sacroiliac motion (physiology AND pathology) \***
        - #3 Flexion/extension: inconsistent and incomplete
      - **MINI-LAB #9: hand on forearm \*\***
      - **MINI-LAB #10: seated lumbar \*\***
        - #4 Internal/external vs medial/lateral

**Noon – 1:30 Lunch**

**1:30 – 5:45**

**Break ~ 3:15 – 3:30**

#### V. Principles of MSS Function \*

**Learning objective - participants will appreciate and be able to discuss the basic principles of musculoskeletal function:**

- MEASURABLE aspects of posture and movement
- Posture
  - Historical definitions
  - Principles of healthy postures
    - Structural organization: cadaveric
    - Structural orchestration
- Terminology of posture for FPMSS: “anatomic position”, standard posture, starting postures/positions
  - **MINI-LAB #11: postural context – positional relationships \*\***
- Movement: kinesiology
  - **MINI-LAB #12: cervical sidebending \*\***
    - Kinetics: orchestration
    - Kinematics: potential and available motion
    - Terminology of motion: axes and planes; points of orientation; rotation and translation; degrees of freedom
    - Rules for motion description
      - Named for initial direction
  - **DEMONSTRATION #4: straight cephalic extremity abduction \***

Friday August 16, 2024

8:45—Noon

Break ~ 10:00—10:15

V. Principles of MSS Function—continued \*

- Described as if axes in reference position

**DEMONSTRATION #5: straight cephalic appendage forward bending & abduction vs abduction & forward bending \***

- Sequencing of planar motions must be specified
- Resolution of “Codman’s Paradox”

**MINI-LAB #13: sequencing triplanar motion at the shoulder \*\***

- Categories of motion ranges and motion barriers

**MINI-LAB #14: backward bending of the index finger MCP, PIP, and DIP \***

- Active physiologic vs passive physiologic vs accessory ranges
- Accessory ranges
  - Component
  - Joint play
  - “Paraphysiologic”
- Elastic vs plastic ranges

VI. General Principles of Evaluation for MSS Dysfunction \*

**Learning objective - participants will appreciate and be able to discuss the:**

- Necessary and sufficient steps for a scientific clinical evaluation
- Principles of physical examination for kinematics

**MINI-LAB #15: available motion linkage of and within pedal extremities \*\***

**MINI-LAB #16: configuration of moving segments: supine bent and straight pedal appendages at knee and hip \*\***

**MINI-LAB #17: postural context – available motions \*\***

- Principles of interpretation for available motion
  - Between vs within system analysis
  - Limitations of “symmetry” vs proportionality
- First stage of interpretation: grading

**DEMONSTRATION #6: starting, grading, and reference positions/excursions \***

Noon – 1:30 Lunch

1:30 – 5:45

Break ~ 3:15 – 3:30

**Learning objective Labs #1, #2, & #3 - participants will be able to competently examine the listed segments as well as describe findings in accord with FPMSS principles: first of three stages—grading**

- Stages of interpretation: grading, profiling, and prioritizing
- Therapeutic goal: decrease disproportion of available motion

**LAB # 1: available motion of progressive segmental pan-spinal and pelvis bending (standing and seated), of whole chest (supine and seated); of whole cervical spine (seated and supine); of whole feet (seated and prone) @ ankles; of legs @ knees (seated and prone – sagittal plane only); of whole pedal appendages @ “hips” (seated, prone, and supine); of whole cephalic appendages @ “shoulders” (seated, prone, and supine); of forearms @ elbows (supine - sagittal plane only); of whole hands @ wrists \***

**Saturday August 17, 2024**

**8:45—Noon**

**Break ~ 10:00—10:15**

**LAB #1** — continued\*\*

**LAB #2** — available motion of and within the legs (supine); within the feet (seated and prone); of within the hips (discriminate motions of the innominates at the FA, SI & PS joints) (supine and side lying); of and within the forearms (supine); of and within the hands; within the shoulders (discriminate motions at the SC, AC, GH, & ST joints) \*\*

**Noon – 1:30 Lunch**

**1:30 – 5:45**

**Break ~ 3:15 – 3:30**

**LAB #2** – continued

**Sunday, August 18, 2024**

**8:45—Noon**

**Break ~ 10:00—10:15**

**LAB #2** – continued

**Learning objective - participants will be able to agree on grades of motion with table trainers and 3 fellow participants**

**LAB#3:** grading—interexaminer reliability

Summary, Questions, and Seminar Evaluation

**Post session A: virtual discussion - TBD**