As the year 2000 came and went, it became apparent that medical education in the United States was not adequately preparing graduates to care for patients with musculoskeletal-related complaints. A study conducted by Friedman and Bernstein found that 75% of a cohort of 85 US medical school graduates failed a basic competency exam in musculoskeletal medicine (1-3). In response to this need for better training, the Bone and Joint Initiative was established (1, 2, 4). Many medical schools, including Michigan State University - College of Human Medicine (MSU-CHM), added a dedicated preclinical course in musculoskeletal medicine in 2003. 65 of the 122 accredited United States medical schools had a required preclinical course in musculoskeletal medicine; by the decade’s end, 100 of the 127 United States medical schools had such a course (4).

The MSU-CHM course has been a mandatory PBL domain since 2007. The course lasts 2 weeks, with 16 lecture hours and 5 PBL cases. Adding this course to the curriculum was a step in the right direction, but there is room for improvement. At present, the course provides an overview of musculoskeletal pathology, but it is not well integrated with the anatomy, radiology, epidemiology, or clinical skills curricula. Because musculoskeletal medicine is interdisciplinary, students should learn early how to interact with other health care professionals to improve patient care. Physicians trained in family medicine, orthopedic surgery, PM&R, rheumatology, and pain management often work with allied health professionals, such as physical therapists and athletic trainers, to manage patients with musculoskeletal complaints. The discipline of musculoskeletal medicine is also extremely tactile; students should have the opportunity to apply their knowledge to clinical practice as early as possible in their training.

We propose a nine-point plan to improve the way musculoskeletal medicine is taught at MSU-CHM. The aim of these changes is three-fold; MSU-CHM graduates should 1) be able to recognize, diagnose, and treat musculoskeletal injuries and illnesses, 2) know how to utilize the expertise of their physician and allied health colleagues to care for patients, and 3) be well-prepared for the musculoskeletal portions of their licensing examinations. It is important that all medical students receive thorough instruction in this subject, as musculoskeletal conditions are the number one reason patients seek a physician visit in the United States (5).

1. Focus on injury patterns during first year anatomy
   a. Addition of two “Clinical Application” sessions during ANTR 551 extremity units
      i. Radiological and physical exam findings (introduce special tests)
      ii. Relevant surgical anatomy
      iii. Options for fixation
   b. Revisit musculoskeletal special tests during first-year epidemiology course
      a. Clinical vignettes: pre- and post-test probabilities of special tests
      b. Purpose: show that special tests are clinically useful when performed correctly
   c. Organize the domain by the orthopedic subspecialties, with lectures given by specialists in the respective fields
      a. Pediatric Orthopedics (congenital conditions and pediatric-specific injuries)
      b. Sports Medicine (biomechanics, ligament, tendon, and muscle injury)
      c. Trauma (fracture and infection)
      d. Total joint (arthritis, rheumatologic disorders, and other arthropathies)
      e. Tumor and Metabolic Bone Disorders
      f. Spine

5. Incorporate biomechanics into the curriculum
   a. Rationale: It is difficult to understand how to treat musculoskeletal injuries without first understanding how they happened
   b. Lecture by a specialist in biomechanics of injury
   c. Lecture on specific injuries by orthopedic surgeon
   d. Provide instruction on physical therapy rehabilitation techniques and modalities during the musculoskeletal domain
   a. A more complete understanding of a physical therapist’s scope of practice to improve collaboration between physicians and allied health colleagues
   b. This lecture should be given by a DPT
   7. Incorporate two radiology small group sessions into the second-year musculoskeletal domain so that students learn how to approach reading films and diagnosing pathology
      a. Options:
         i. Two mandatory small group sessions with a radiologist to learn to read films and detect abnormalities
         ii. Include radiological images with day 1 of PBL material for the cases, don’t give the official reading until day 2 - students are expected to come up with their own reading of the films
      b. Add interpretation of radiological films on the domain exam

References