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## Rehabilitation Concepts in Muscle, Joint, Brain and Nerve Physiology Mini-Elective Spring 2020

<u>Course Dates:</u>	January 9, 23, 30, February 20 Thursdays, 1:00-5:00 PM
<u>Maximum Students:</u>	8
<u>Class Year:</u>	MS1 and MS2
<u>Course Director:</u>	Brad E. Dicianno, MD
<u>Contact Information:</u>	Brad E. Dicianno, MD 412-648-6666 dicibe@upmc.edu
<u>Registration:</u>	Betsy Nero, Office of Medical Education betsy@medschool.pitt.edu

### Description:

This four-session mini-elective introduces students to rehabilitation concepts in the physiology of muscle, joints, brain and nerves. Sessions are held at various locations for hands-on experience and observation. The goal of this program is to explore the relationship among anatomy, physiology, and human motion. This course highlights ways rehabilitative efforts and technology can be used to diagnose and treat disorders of the neuromuscular system. Through both didactic and hands-on exposure at these sites, this series covers topics including:

- The use of musculoskeletal ultrasound to identify normal and pathological structures of joints
- The pathophysiology and treatment of traumatic brain injury and concussion.
- Anatomy of joints and techniques used to guide injections
- The use of Nerve Conduction Studies and Electromyography as a way to diagnose neuromuscular diseases.
- Basic pathology and effects of spinal cord injury, including management of spasticity

### Objectives:

- To understand the physiology of traumatic brain injury
- To understand the anatomy of the major joints
- To become familiar with Nerve Conduction Studies and Electromyography and understand their role as an extension of the physical examination.
- To review nerve and muscle physiology, including muscle recruitment as demonstrated by EMG
- To understand multimodal management of upper motor neuron spasticity including botulinum toxin injections and baclofen pump management
- To understand the basic pathology of a spinal cord injury and related functional deficits based on level of injury

### Requirements:

- Active participation in all 4 course sessions.

## **Course Outline**

### **Rehabilitation Concepts in Muscle, Joint, Brain and Nerve Physiology**

#### **Course Director:**

Brad E. Dicianno, MD  
Associate Professor  
University of Pittsburgh Medical Center  
Dept. of Physical Medicine and Rehabilitation  
Kaufmann Medical Bldg, Suite 910

#### **Faculty:**

Dr. Jessica Berry  
Dr. Gary Galang  
Dr. Amanda Harrington  
Dr. Geoffrey Henderson (SCI Fellow)  
Dr. Kentaro Onishi  
Dr. Suehun Ho  
Dr. Jennifer Shen

#### **Location:**

Various locations outlined below.

All sessions are 1-5 pm.

#### **January 9**

Musculoskeletal Exam and Ultrasound  
Location: Kaufman Building Conference Room 910  
Instructors: Drs. Kentaro Onishi and Suehun Ho

#### **January 23**

Spinal Cord Injury, Spasticity, Baclofen Pumps, and Botox Injections  
Location: Meet in Mercy Inpatient Spinal Cord Injury Unit Resource Room 7015  
Instructor: Drs. Amanda Harrington and Jessica Berry with assistance from SCI Fellow, Dr. Geoffrey Henderson

#### **January 30**

Traumatic Brain Injury  
Location: Meet at inpatient Stroke Rehab Unit, Mercy Hospital, 6th Floor, Resource Room 6228  
Instructor: Dr. Gary Galang

#### **February 20**

Electromyography and Nerve Conduction  
Location: Meet at inpatient Stroke Rehab Unit, Mercy Hospital, 6th Floor, Resource Room 6228  
Instructor: Dr. Jennifer Shen

#### **Special Instructions:**

Professional dress is requested for the spasticity and TBI groups. Please wear scrubs for the other two sessions.

You will not necessarily receive reminders from the School of Medicine about these sessions. Please take it upon yourself to put these sessions and their locations on your own calendar.