640C NEUROMUSCULAR MEDICINE

Course Description: This elective provides experience in neuromuscular disorders including participation in specialty neuromuscular clinics, (dealing with a variety of acquired and inherited disorders) and exposure to basic and advanced electrodiagnostic procedures, muscle and nerve pathology, skin biopsy and autonomic testing.

Department: Neurology

Prerequisites: Successful completion of first- and second-year year curriculum. Successful completion of the third-year neurology core rotation. At least one USMLE score must be available.

Restrictions: None

Course Director: Manisha Korb, MD, UCI Medical Center, Department of Neurology, 200 S. Manchester Avenue, Ste. 206 Orange, CA 92868 Phone: 714-456-7432 Fax: 714-456-5997 **mkak@uci.edu**

Instructing Faculty:
Tahseen Mozaffar, MD Professor of Neurology & Orthopaedic Surgery
Namita A. Goyal, MD Associate Clinical Professor of Neurology
Ali Habib, MD Associate Professor of Neurology
Manisha Korb, MD Assistant Professor of Neurology

Course Website: **http://www.neurology.uci.edu/overview.html**

Who to Report to First Day: Manisha Korb, MD

Location to Report on First Day: UCI-MDA ALS and Neuromuscular Center, 200 South Manchester Avenue, Ste. 110, Orange CA 92868

Time to Report on First Day: 8:30 am

Course Coordinator: Nicole Santos, 200 South Manchester, Suite 206, Orange, CA 92868. Phone: 714-456-3565; Fax:714-456-8805; email: santosn@hs.uci.edu

Site: UC Irvine Medical Center

UCI students must officially enroll for the course by contacting the Scheduling Coordinator via email or phone (714) 456-8462 to make a scheduling appointment.

Extramural students enrolled at a U.S. LCME medical school must use VSAS to apply. To apply please refer to the VSLO website.

Periods Available: September - June

Duration: 4 weeks

Number of Students: 1 per block

Course Objectives: At the end of this rotation the student will be able to:

- Recognize clinical patterns that help differentiate central nervous system disorders from peripheral nervous system disorders
- Recognize clinical patterns that help differentiate disorders of muscle from disorders of peripheral nerves from disorders of neuromuscular junction
- Recognize the utility of various diagnostic tools that aid in reaching a diagnosis of neuromuscular disorders
- Recognize the importance of multidisciplinary care in management of complex neuromuscular patients
- Recognize methods and tools available to help patients overcome their disability from neuromuscular disorders

- Recognize importance of palliative and hospice care in patients with advanced and fatal neuromuscular disorders.

Key Topics:

- The ability to distinguish peripheral nervous system disorders from central nervous system disorders
- Learn the basics of major neuromuscular disorders, such as ALS, Myasthenia Gravis, Muscular Dystrophies, and Peripheral Neuropathy
- Learn the utility of various forms of neurodiagnostic studies to aid the diagnosis of neuromuscular disorders
- Learn the utility of muscle and nerve pathological studies to aid the diagnosis of neuromuscular disorders
- Learn the role of multidisciplinary care in management of complex neurological disorders

Competencies:

- The ability to distinguish peripheral nervous system disorders from central nervous system disorders
- Learn the basics of major neuromuscular disorders, such as ALS, Myasthenia Gravis, Muscular Dystrophies, and Peripheral Neuropathy
- Learn the utility of various forms of neurodiagnostic studies to aid the diagnosis of neuromuscular disorders
- Learn the utility of muscle and nerve pathological studies to aid the diagnosis of neuromuscular disorders
- Learn the role of multidisciplinary care in management of complex neurological disorders

Attitudes and Commitments:

- Appreciate the challenges faced by disabled patients who suffer from progressive neuromuscular dysfunction
- Appreciate the challenges families face dealing with fatal, progressive neuromuscular dysfunction
- Commitment to help achieve independence in activities of daily living for such patients with progressive neuromuscular dysfunctions

Educational Activities:

Monday AM (8 AM – 12 noon) EMG (Mozaffar)

Monday PM (1 PM – 5 PM) Neuromuscular Clinic (Dr. Goyal)
Tuesday all day (8 AM – 5 PM) ALS/Muscular Dystrophy Association Clinic (Dr. Mozaffar and Dr. Goyal)
Wednesday AM (8:30 AM – 12 PM) Educational Activities (Didactic lectures, EMG cases and review of neuromuscular pathology)
Wednesday PM (1 PM - 5 PM) EMG (Dr. Goyal)
Thursday all day (8:30 AM – 5 PM) EMG (Dr. Goyal)
Friday AM (8-9 AM) Neurology Grand Rounds
Friday AM (9 AM – 12 PM) Neuromuscular Clinics (Drs. Mozaffar) 1st and 2nd Fridays of the month
Friday PM (1 PM – 5 PM) Myasthenia Gravis Clinics (Dr. Mozaffar and Dr. Chui) 1st Friday of the month
Friday PM (1 PM – 5 PM) Urgent EMG or Clinic (Goyal or Mozaffar)

What Students Should do to Prepare for the Rotation: The students should revise their knowledge of peripheral nerves in the limbs and the muscles innervated by these nerves. We also recommended that they are fully informed of the root values and plexus origins of these muscles.

Clinical Responsibilities of the Student: The students will be working directly with the attendings and will be the primary contact with the patients assigned to them. They will also be part of the neuromuscular team, working with the neuromuscular medicine fellow and the clinical neurophysiology fellow to prepare the didactic sessions, review the muscle and nerve pathology slides and present topics assigned by the attendings during their rotations. If during this period, there are neuromuscular patients admitted to the hospital the medical students will be asked to work them up and follow them along with the ward teams.

Patient Care Responsibilities: The students will be asked to see the patients first and by themselves (acting at the level of a sub-intern). They will take history from the patients, review the medications, do a review of pertinent symptoms, examine the patient and present this to the attending. They will be expected to formulate a differential diagnosis and a diagnostic and management strategy for such patients.

Call Schedule of the Student: There are no calls associated with this rotation.

Procedures to be Learned by the Student:

- Nerve conduction studies
- Needle EMG studies
- Skin biopsies for diagnosis of small fiber neuropathies
- Lumbar puncture

Percentage of Time Student will Participate in Ambulatory Setting: 80-90% This is predominantly an outpatient rotation.

Conference/Lecture/Small Group Sessions:

Approach to neuropathy	Lecture
Approach to myopathies	Lecture
Approach to Neuromuscular Junction disorders	Lecture
Fundamentals of muscle biopsy	SGD
Fundamentals of EMG and nerve conductions	SGD
Weekly case presentations	Case vignettes

Case vignettes. Case vignettes will cover common neuromuscular conditions and will teach standardized approach to common neuromuscular conditions.
Small group discussion: the students will participate in the Wednesday small group discussion that highlights interesting cases of the week/month

Course Hours Weekly Summary:

40%	Case Based
30%	Conference
10%	Clinical Correlates
5%	Grand Rounds
5%	Examinations
5%	Laboratories
5%	Patient-Care Activities
	Small Groups

100%	Total

Content Theme Integration: Integrate brain structure and function of the nervous system with internal medicine and psychiatry.

Required Reading List:

Michael H. Brooke, MD. A clinician's view of neuromuscular diseases. Second Edition. Williams & Wilkins, Baltimore, MD. 1986 (out of print – but reserved copy available in the Neuromuscular Center)

Recommended Reading List:

Anthony A. Amato, James A. Russell. Neuromuscular Disorders. 1st Edition. McGraw Hill Medical, New York, NY. 2008 (copy available in the neuromuscular center)

Official Grading Policy: The student will receive a grade of Honors, Pass or Fail. The student's final grade will be submitted on the standard UCI elective form. If the student fails the elective a grade of "F" will be permanently recorded on his/her transcript. The student can repeat the course for a second grade, however, the "F" will not be removed from the transcript.