

## 640E NEUROLOGY CRITICAL CARE (NEURO ICU CORE ROTATION)

**Course Description:** This elective in Neuro Critical Care and ICU is designed to give the student increased exposure and autonomy in care of the Neurocritical care patient, including the medical treatment in acute neurological patients. Students function as sub interns, becoming integral members of the ICU team, and several primary caregivers under supervision.

**Department:** Neurology

**Prerequisites:** Successful completion of first- and second-year curriculum. Successful completion of the third-year neurology core rotation

**Restrictions:** This course does not accept international students

**Course Director:** Sara Stern-Nezer, MD, UCI Medical Center 200 S. Manchester Ave., Suite #206, Orange, CA 92868 Phone: 714-456-3420 Fax: 714-456-6894 Email: [sara.s@uci.edu](mailto:sara.s@uci.edu)

### Instructing Faculty:

Cyrus Dastur, MD HS Clinical Professor of Neurology  
 Leonid Groysman, MD HS Clinical Professor of Neurology  
 Yama Akbari, MD PhD Clinical Professor of Neurology  
 Sara Stern-Nezer, MD Assistant Clinical Professor of Neurology  
 Frank P K Hsu, MD, PhD, Chair and Clinical Professor of Neurological Surgery  
 Kiarash Golshani, MD Assistant Clinical Professor of Neurological Surgery  
 Jefferson Chen, MD Assistant Clinical Professor of Neurological Surgery  
 Shuichi Suzuki, MD, PhD, Assistant Clinical Professor of Neurological Surgery

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

**Who to Report to First Day:** Sara Stern-Nezer, MD, Neurology Clerkship Director / Nicole Santos, Neurology Education Coordinator, [santosn@hs.uci.edu](mailto:santosn@hs.uci.edu)

**Location to Report on First Day:** Douglas Hospital, 5200 Workroom, 101 The City Drive, Building 1, Orange, CA 92868

**Time to Report on First Day:** 7:30 am

**Site:** UCI Medical Center

**Periods Available:** Throughout the year

**Duration:** 4 weeks

**Number of Students:** 1 per block

**Scheduling Coordinator:** \_\_\_\_\_

**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](#).

### Course Objectives:

- The sub-internship will provide the student with experience and preparation for inpatient medical care
- The student will be a "first evaluator" of patients, and perform complete and reliable history on new admissions
- The student will be expected to independently establish a differential diagnosis based on lesion localization, time course, and other relevant historical features

- The student may write admitting and daily patient diagnostic and therapeutic orders, under the supervision of a resident and/or attending physician
- The student will evaluate patients on a daily basis on morning rounds, and serve as the principle caregiver, under the direct supervision of a resident and attending physician.
- Awareness of the utility and interpretation of various diagnostic tools that aid in reaching a diagnosis of acute neurological disorders
- The student will be able to recognize the importance of multidisciplinary care in management of complex neurological patients
- The student will be able to recognize the importance of palliative and hospice care in patients with advanced and fatal neurological disorders

#### **Additional objectives:**

- The student will gain skills in teaching junior medical students about patient care skills.
- The student will show increasing abilities to work with other members of the healthcare team, to communicate and consult on an increasingly effective level.
- The student will demonstrate increasing responsibility and ability to care for neurologic patients including diagnosis, management, patient education, and discharge planning.

#### **Key Topics:**

- Approach to care and management of the acutely ill neurology patient
- Basics of Neuro-Intensive Care
- Management of complex post-operative neurosurgical patients
- management of intracranial pressure
- Basics of bedside procedures including central lines, arterial lines, intracranial pressure monitors, external ventricular drains, etc.

#### **Competencies:**

- Learn the basics of management of the Neurologic patient in the Intensive Care Unit
- Learn the utility of various neuro-imaging studies to aid in the diagnosis of cerebrovascular disorders
- learn the role of multidisciplinary care in management of complex neurological disorders
- Learn the basics of management of the following in the Neuro ICU patient: respiratory failure, diagnosis/treatment, ventilator therapy/modes/weaning, invasive monitoring, placement/interpretation, cardiogenic shock/cardiodynamics, cardiac dysrhythmias/ACLS, fluid, electrolyte, acid-base management, sepsis/infection control, renal insufficiency/failure, coagulopathy/blood component therapy, hepatic/gastrointestinal dysfunction and failure

#### **Attitudes and Commitments:**

- Appreciate the challenges faced by Neuro-Intensive care patients who suffer from acute neurological conditions
- Appreciate the challenges families face dealing with a family member with an acute neurological condition.
- Commitment to help achieve independence in activities of daily living for such patients with neurological dysfunctions.

#### **Educational Activities:**

Monday through Friday (6:30 AM - 6 PM) Patient Rounds and required final exam on last day of course.

In Addition:

Wednesday AM (7:30 - 9:00 AM) Neuro-Radiology Case Conference

Thursday PM (5 PM - 6 PM) Stroke Clinical Case Conference

Friday AM (8 AM - 9 AM) Neurology Grand Rounds

Friday AM (9 AM - 10 AM) Neurosurgery Grand Rounds

**What Students should do to Prepare for the Rotation:** Thorough understanding of the basic Neurosciences.

**Clinical Responsibilities of the Student:** Rounds, new inpatient visits, and daily pre-rounding on their assigned patients, consults in the Emergency Department

**Patient Care Responsibilities:**

- Rounds with Attending Physician
- Initial Patient evaluation

**Call Schedule of the Student:**

- One elective weekend or overnight call shift per week

**Procedures Learned by the Student:**

- Lumbar puncture
- Arterial Lines
- Central Venous Lines
- External Ventricular Drains
- Intracranial pressure monitors (Camino Bolt Intracranial Pressure Monitor)

**Percentage of Time Student will participate in Ambulatory Setting:** 0-5% this is predominantly an inpatient rotation.

**Conference/Lecture/Small Group Sessions:**

All students will participate in the same schedule of Neurology conferences, and didactics.

All students will participate in four weeks of Neuro-critical care service

**List the required rotations that are part of the clerkship, and the average amount of time spent in each**

Neuro-critical care service - 4 weeks

**Course Hours Weekly Summary:**

2.5	Conference
2	Grand Rounds
2	Lecture
57.5	Ward Rounds
2	Other
65	Approx. Total

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

**Required Reading List:**

Readings will be assigned

- The NeuroICU Book. Kiwon Lee, 2012
- Decision Making in Neurocritical Care. Jennifer A Frontera, 2009
- Handbook of Neurocritical Care / edited by Anish Bhardwaj, Marke A Mirski, John A Ulatowski, c2004

Recommended:

- Hal Blumenfeld, MD PhD, *Neuroanatomy Through Clinical Cases*. 2nd edition. Sinauer Associates Inc Publishers, Sunderland, MA. 2010.
- Michael Benatar, Bernard S. Chang, Juan A. Acosta, Andrew Tarulli, Louis R. Caplan. *Blue Prints Neurology*, 3rd edition. Lippincott Williams & Wilkins, Philadelphia, PA. 2009.

Optional:

**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.