**SPECIAL STUDY MODULE**
**CLINICALLY-ORIENTED ANATOMY**

A. SPONSORING DEPARTMENTS: Departments of Surgery and Cell Biology & Human Anatomy

B. INSTRUCTORS OF RECORD

Vijay Khatri, M.B., Ch.B., FACS
Vijaya Kumari, MBBS., PhD.

FACULTY:
Dr. James Boggan, Department of Neurosurgery, UCDMC
Michael Beneke, MD, General Surgeon, Sutter General Hospital
Royce Calhoun, MD, Division of Cardiothoracic Surgery, UCDMC
John Dalrymple, Division of Gynecologic Oncology, UCDMC
Danny Enepekedis, MD, Department of Head and Neck Surgery, UCDMC
Scott Hundahl, MD, Department of Surgery, VA Mather/UCDMC
Rose Hagge, MD Department of Radiology, UCDMC
Karen Heiden, MD, Department of Orthopedics, UCDMC
Javid Javidan, Department of Urology, VA Mather, UCDMC
Vijay P. Khatri, MD, Division of Surgical Oncology, UCDMC
Vijaya Kumari, MBBS, PhD, Assistant Dean of Curricular Activities
Eugene Lee, MD Division of Vascular Surgery, VA Mather, UCDMC
Dan Link, MD, Division of Interventional Radiology, UCDMC
John Meehan, MD, Department of Orthopedics, UCDMC
Dr. Meadows, Department of Pathology, VA Mather
Robert Szabo, MD, Department of Orthopedics, UCDMC
Eiler Sommerhaug, MD, Division of Plastic Surgery, UCDMC
Nilus Young, MD, Division of Cardiothoracic Surgery, UCDMC

C. DATES OFFERED: 4/9 – 5/4/2007

D. COURSE DESCRIPTION

This four week course will review selected aspects of the anatomy of the head and neck, thoracic cavity, abdomen, pelvis, extremities, vascular system, peripheral nervous system and central nervous system.

The focus will be the understanding of anatomy related to common surgical procedures. Faculty will choose no more than 3 key operations that highlight the anatomy of each region. They will provide written guidelines for the operations, created by them, or referenced in a textbook. Students and faculty will receive dissection guidelines for the region from the Grant's Dissection Manual that students are familiar with from year 1. Surface anatomy will be an important component of the regional dissections.

E. COURSE OBJECTIVES

1. To comprehend the important surface landmarks used in clinical practice.
2. Review the essential anatomical structures that are encountered during operative/percutaneous procedures.

F. GRADUATION OUTCOMES AND OBJECTIVES

The module meets the following General Competencies and Educational Objectives:

I. UCDSOM graduates will demonstrate knowledge about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to patient care.
V. UCDSOM graduates will exhibit interpersonal and communication skills that result in effective information exchange and teaming with patients, their patients' families, and professional associates.
VI. UCDSOM graduates will demonstrate life-long learning skills.

G. COURSE SPECIFICS

*Didactics and Demonstrations:* The module is structured to have a 3 hour morning block that begins with a 30-45 minute didactic presentation by the faculty, followed by faculty demonstrations of the dissections.

*Regional anatomy self-study*: Students will engage in self study of the regional anatomy and operation guidelines in the afternoon using the dissections, prosections and anatomy/surgical videos/CDs.

*Procedures:* Every Wednesday afternoon, students will be required to perform one of the procedures on the undissected side of the cadaver, or alternatively, in the case of the body cavities, demonstrate this or the normal anatomy to other students and one of the instructors.

*Radiology:* On the first and second Fridays, students will take turns attending interventional radiology sessions and the OR. There will be a didactic presentation on interventional radiology, followed by opportunities for observing procedures. On the third Friday, students will attend Endoscopy suite to learn endoscopic anatomy of the G.I. tract.

*Cross-sectional Anatomy and Pathology:* In the fourth week, the morning will be spent reviewing cross-sectional anatomy using imaging studies. In the afternoon, they will attend pathology grossing room to review the gross anatomy of resected anatomical parts.

*Impact on Patients and Communities:* We believe that the module will help students better prepare for surgical procedures that they are likely to do as residents and beyond. By being better prepared, it is likely that they will be able to minimize complications and avoid mistakes that can cause potential harm to the patients. Hopefully, the module will stimulate a life-long interest in acquiring a thorough knowledge of the approaches and the relevant anatomy for any surgical procedures that they will undertake in the future.

*Reading/writing***:** Students will review the regional anatomy using a standard anatomy textbook (Grays/Snell), the Grant's Dissector, and surgery textbooks of choice of the faculty.

*Evaluation, presentation, and discussion of research:* Students will be required to select one surgical procedure not included in the module (from a comprehensive list) and write a description of the approach highlighting the relevant anatomy. They will also identify a recent publication related to the procedure and provide a one page summary. They will make brief presentations of these materials to the rest of the group during the last day of the module. The last day will be set aside for student presentations and evaluation of the module.

*Teaching responsibility:* The only teaching responsibility for the students will be the demonstrations of student dissections/normal anatomy to other students and to the instructors.

## H. ASSESSMENT OF STUDENTS

Students will receive feedback on the surgical procedures that they themselves perform as well as any anatomical demonstrations that they will do. This feedback will be verbal, on-the-spot and constructive in nature. In addition, student presentations will be evaluated by the two instructors for the depth of content, ability to concisely summarize the major steps of the procedure, the relevant anatomy, and critique of a chosen publication from the literature. In addition, they will receive a critique of the quality of the oral presentation.

Grading will be based on the evaluations listed above. In addition, we will consider providing a written examination using MCQs. Grading will be P/F only.

## I. PROGRAM ASSESSMENT

We will provide a questionnaire to the students at the end of the module to evaluate the effectiveness of the module, what worked and what did not, and solicit suggestions for improvement. Faculty who participate in the course and the Co-instructors will also be evaluated for their respective roles in overseeing and teaching the module.

At the end of the first year of residency, we will ask for a retrospective critique on the usefulness of the SSM by surveying PGYIs as a part of the routine feedback we now solicit from them.

J. MUTIDISCIPLINARY PLANNING

Dr. Khatri will be responsible for recruiting the surgical faculty, assigning them to specific days of the week and for feedback on students' operative procedures. In addition to general surgery, the faculty will be drawn from: Cardiothoracic surgery, vascular surgery, orthopedics, E.N.T., Radiology, Ob/Gyn and the V.A. A list of the names of the faculty who have agreed to participate is included. Dr. Khatri will also be present on two afternoons a week to evaluate students' dissections.

Dr. Kumari will be responsible for ensuring the availability of a cadaver, relevant prosections, and any multimedia resources for self-study. She will additionally coordinate the module by working with a staff member to ensure that the faculty and students receive the schedule and that supplemental materials are gathered ahead of time and copied for the students. She will be also available on all mornings for faculty presentations and some afternoons when students are engaged in self-study.

K. PREREQUISITES AND ENROLLMENT

*Prerequisites*: Third year required clerkships

*Enrollment:* 6-9 Students

L SCHEDULE

## CLINICAL ANATOMY SPECIAL STUDY MODULE
## TENTATIVE COURSE SCHEDULE
## Vijay Khatri, MD, FACS and Vijaya Kumari, MBBS, PhD

| | | Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|---|---|
| **Week 1** | **AM** | Head and Neck (Enepekedis) | Lung and thoracic cavity (Dr. Calhoun) | Heart and Great vessels (Dr.Nilas) | Upper Extremity (UE) (Dr.Szabo/ Heiden) | Lower extremity (LE) (Dr. Meehan) |
| | **PM** | Self Study | Self Study | Self Study | Self Study | Operating Room/Interventional Radiology |
| **Week 2** | **AM** | Abdomen-Incisions/ GI tract (Dr. Khatri) | Abdomen-GI tract (Dr. Hundahl ) | Abdomen-Solid Organs (Dr. Khatri) | Pelvis (Dr. Dalrymple) | Urogenital System (Dr. Javidan) |
| | **PM** | Self Study | Self Study | **Student Evaluation** | Self Study | Operating Room/Interventional Radiology |
| **Week 3** | **AM** | Per. Nervous system-UE (Dr.Sommerhaug | Per. Nervous system-LE (Dr. Kumari) | Central Nervous System (Dr. Bogan/Dr. Kumari) | Vascular System (Dr. Lee) | Vascular System (Dr. Lee) |
| | **PM** | Self Study | Self Study | **Student Evaluation** | Self Study | GI Endoscopy |
| **Week 4** | **AM** | Radiology-CT Chest | Radiology-CT Body | Radiology-Musculoskeletal MRI | Radiology-GI Radiology | **Student Presentations/ Feedback** |
| | **PM** | Gross Pathology-VA Mather (Dr. Meadows) | Gross Pathology-VA Mather (Dr. Meadows) | Gross Pathology-VA Mather (Dr. Meadows) | Gross Pathology-VA Mather (Dr. Meadows) | Lecture: History of Anatomy (Dr. Beneke) |