Elective Catalog Description

Sponsoring Department: Research together with clinical partners from Emergency Medicine, OB/GYN, Levine Cancer Institute, General Surgery, Hepatology, Gastroenterology and others TBD

Course Number and Title: MEDI 506 - Science of Medicine Selective: Applied Molecular Biology in Hepatology, Charlotte, NC

Faculty: Nury Steuerwald, PhD together with clinical partners including Jeffrey Kline, MD, Bradley Hurst, MD, Mark Russo, MD, David Iannitti, MD, Derek Raghavan, MD, Herbert Bonkovsky, MD

Prerequisites: (Charlotte Branch Campus Students have First Priority) Medical Student in good standing

Periods Offered: September 24 – October 19, March 25 – April 19

Min/Maximum Enrollment: 1-2 students

Credit Hours: 6

Clinical/Non-Clinical: Laboratory-based with clinical opportunities arranged depending on topic and/or focus area

Duration of Elective/Selective: 4 weeks

Where/When to report on first day: Carolinas Medical Center, Cannon Research Center, room 211, 9:00 am

Learning Objectives: (what student will be able to do as a result of this experience)
The goal of the course is to provide students with an opportunity to delve more deeply into the emerging basic science tools used in the diagnosis and research of clinical problems, re-emphasize basic science from preclinical years and provide a foundation for evidence-based practice of clinical medicine. In particular, the objectives are to describe the scientific principles underlying laboratory diagnostic methodologies as well as to discuss the molecular basis of major conditions related to area(s) of specialty/disciplinary interest.

Learning Activities: (What the student will do e.g., conferences, rounds, clinic, expected hours, on-call requirements/opportunities)
The course hours will be M-F 8:00 am – 5:00 pm. Students will be taught how to perform state-of-the-art techniques routinely used to screen for mutations and for genotyping (i.e. qPCR, sequencing, DNA microarrays), for expression analysis (i.e. qRT-PCR, RNA microarrays, RNA-seq), or for cytokine profiling (Luminex assays). Students will also
spend time observing activities in the clinical department related to their intended specialty in order to learn how these techniques can be applied. Students will be required to attend weekly lab meetings and research department seminars.

Evaluation: (How student will be evaluated e.g., observed administering procedures, interviewing patients, presentation at case conference, participation in rounds, patient write-ups)
The student will be asked to keep a lab notebook which will be reviewed daily. The student will be appraised based on the quality of his/her bench work and results of the experiments. Participation in lab meetings, seminars and clinical opportunities will also be considered.