

DATE: July 27, 2011

TO: First Year Graduate Students and Faculty
Department of Microbiology and Immunology

FROM: Dr. Paul Fletcher; Course Director, MCBI 7490

RE: Fall Semester 2011

MCBI 7490: **Introduction to Research.** Fall Semester 2011 Meets **Mondays** at 2:00 thru 4:00PM in Brody 5E-114 MCBI Conference Room unless scheduled otherwise by your instructors.

Aug. 29 Mr. Eddie Johnson & Nick Chaplinski **Safe handling of Blood-borne Pathogens**
Dr. Daniel Martin **Laboratory Safety**

Wednesday
Sept. 7 Dr. Shaw Akula **Introduction to Cell Culture** Cell culture techniques. List culture facilities, and resources in our department.

Sept. 12 Dr. Achut Malur **Radioactivity** Planning and execution of experimental design that implement radioisotope tracers. List of scintillation counters, flow scint. counter, Phosphorimager, etc.

Sept. 19 Dr. James McCubrey **Centrifugation** Planning and execution of centrifugation procedures. Emphasis is placed on safety, sample recovery, and efficient use of equipment.

Sept. 26 Dr. Jim Coleman **Spectrophotometry** Assay of extract for protein concentration. Supplement; list of spectrophotometers/fluorometers available in our department.

Oct. 3 Dr. Marty Roop **Bioassays** General principles for determination of biological activity/specific activity.

Oct. 17 Dr. Paul Fletcher **Chromatography** Current application of modern chromatography for analytical and preparative separations that account for recovery of protein and biological activity. List of special chromatography equipment.

Oct. 24 Dr. Eb Pesci **DNA Electrophoresis** Electrophoresis of PCR amplified DNA, EtBr staining and photodocumentation.

Oct. 31 Dr. Mark Mannie **PCR** Introduction w/ emphasis on RT PCR. Demonstrate: simple PCR amplification, setup, and start PCR reactions. Supplement: list PCR machines in our Department.

Nov.7 Dr. Nick Polakowski **Transfection & Transformation** Planning and execution of efficient transfers of genetic materials into biologically active systems.

Nov. 14 Dr. Richard Franklin **Immunoprecipitation, PAGE, & Western Blots** Immunoprecipitation, electrophoresis, and Western Blots highlight application of current implementation of immunological lab practice.

Nov. 21 Dr. Douglas Weidner **Flow Cytometry and Confocal Microscopy - Meet in 4W-37.** An introduction to application of cellular and particulate analysis of suspensions by light scattering and fluorescence parameters at high throughput with sorting capabilities. This session will also include an introduction to application of confocal microscopy as used for image analysis, co-localization and 3-dimensional reconstructions.

- Nov. 28** Dr. Paul Fletcher **Computational Chemistry and Visualization** Planning and production of presentation formats for experimental information and images. Emphasis will be on molecular and microscopic models for presentations, posters and publication.
- Dec. 5** Dr. Jeff Smith **Bioinformatics** Management and analysis of nucleotide sequence data through on-line databases and computational resources like GCG provide insight and contextual information for genomic research.