

Fall 2008

PHC7650 Minicourses

Each course will consist of 3 hours of lecture per week for 4 weeks and will be allotted 1 credit. Class meeting times will be arranged with the instructors. An organizational meeting for all courses will be held on Thursday, September 4th at 1:00 PM in the Pharmacology Library (6364 Scott Hall) to determine enrollment and meeting days and times for each of the courses. Contact the listed instructors for course details or R. Yamazaki (ryamazak@med.wayne.edu) for general information.

Session 1: (Sep 3 - Oct 4) *Stem Cells and Therapeutic Applications*

This minicourse will use a mixture of lectures, paper discussions and laboratory demonstrations of techniques. The course participants will obtain a basic overview of embryonic, adult and cancer stem cell biology. The stem cell niche and "stemness" genes will be discussed in more detail. Assay techniques for the isolation and growth of stem cells will be demonstrated. Stemness factors such as the enzyme telomerase or members of the insulin-like growth factor family will be highlighted as potential targets for pharmacological modulation in diseases such as cancer.

Instructor: [Angelika Burger](#)

and/or

Novel Therapeutic Approaches Targeting the Tumor Microenvironment

Tumor initiation, progression and metastasis are modulated by the interactions of tumor cells with their microenvironment, yet most current cancer therapeutics, with the notable exception of anti-angiogenesis agents, target the tumor cells. Further, tumor metastasis is the main cause of mortality in cancer, but it is not the direct target of most current cancer therapeutics, which focus on inhibition of proliferation and induced cell death. This course will be based on student discussion from recent articles and reviews on emerging approaches that are currently in development to treat cancer through targeting of the tumor microenvironment.

Instructors: [Ray Mattingly](#) and [Bonnie Sloane](#)

Session 2: (Oct 6 - Oct 31) *Methods in Cancer Research*

The goal of this minicourse is to introduce students to common techniques used in the field of cancer research. This course will apply to pharmacology as techniques that will be used to test pharmaceutical agents for efficacy in cancer cells will be the focus of the

material presented. We will cover the principles behind the techniques as well as the methodology. Both in vitro and in vivo methods will be covered.

Instructors: [Julie Boerner](#) and [Karin List](#)

Session 3: (Nov 3 - Nov 28) ***Pharmacology and Molecular Biology of Membrane Transporters***

This minicourse will focus on the process of membrane transport, and will emphasize biochemical mechanisms involved in the regulation and toxicological, nutritional, and pathological significance of selected transport pathways. The course will be a combination of lectures, which will provide background material, and study and discussion of original literature focused on specific transporters.

Instructors: *Lawrence Lash and Larry Matherly*