GMS 5905: Recent Advances in Cancer Metastasis
Spring 2012

Class Meetings: Mondays & Thursdays 2:00pm-4:00pm
Class Location: Cancer Genetics Research Building (2033 Mowry Road), Room 291
Credit Hours: 1 credit (two 2-hour sessions per week for 4 weeks)
Course Directors: Lizi Wu, PhD and Jianrong Lu, PhD
Office Hours: TBD
Office: CGRC Room 362 (Wu) and Room 357 (Lu)
Phone: 352-273-8205 (Wu) and 352-273-8200 (Lu)
Website: TBD

Course Description
Cancer metastasis is the process in which tumor cells spread from their primary sites to distant organs. It is the leading cause of death from cancer and has emerged as a critical and important field of cancer research. Although our understanding of molecular events that regulate cancer metastasis has improved significantly, the metastatic process remains poorly defined due to the complicated, dynamic nature of host and tumor interactions and limited research tools and models. This course will cover the recent progress in cancer metastasis including the interactions between tumor cells and host environments at molecular and cellular levels during metastatic process as well as tools and models available for cancer metastasis research. This course is targeted at graduate students interested in cancer research (e.g., Genetics and Genomics, Biology, IDP).

Course Objectives
The goal is to acquaint students with knowledge and approaches as well as limitations in current cancer metastasis research. Students are expected to gain a general knowledge on molecular and cellular regulation of tumor cells and tumor cell-microenvironment interactions during the process of cancer metastasis as well as to learn about the advantages and limitations of various approaches that are currently used in the cancer metastasis research.

Course Procedure
This course is intended to provide students with a broad overview of cancer metastasis and available approaches for cancer metastasis research. The class format will be a one-hour lecture followed by one-hour presentation and discussion of a recent paper relevant to the lecture topics.
STUDENT COURSE REQUIREMENTS
The following will be used to assess students’ progress in achieving the course objectives:

1. **Attendance and participation.** Each student is expected to read the assigned papers prior to class, and be an active and regular participant in class discussions.

2. **Presentation.** Each student is expected to present once on selected paper(s) to the rest of the class pertaining to the topic that is covered on the same date. Presentation will address background and significance, specific research problems that are addressed, approaches, results, conclusions, and future research directions. Strengths and limitations of approaches and data will be evaluated.

3. **A written critique paper.** Students will be assigned with selected research papers pertaining to the topics that are covered in the class and are expected to write a critique paper on the assigned research papers. The word count of the critique paper is within 1000-1500 words and should be double-spaced typed. References (up to 15) must be included but do not count towards the word limit. The critique paper is due one week after the last lecture date.

EVALUATION AND GRADING
Grades will be based on attendance and participation in discussions (20%); paper presentation (40%); and a written critique paper (40%). Any assignment turned in after the deadline will receive one grade below what it would have earned had it been submitted on time.

The following grading system will be used: A (90% or higher), A- (85-89%), B+ (80-84%), B (75-79%), B- (70-74%), C+ (65-69%), C (60-64%).

TEXTBOOK AND READINGS
No text is required. Weekly assigned journal research articles and reviews will be used for reading and discussion. Please check the course website for specific readings and dates.

TOPICAL OUTLINE
Session 1. Overview for tumor metastasis: seed and soil and beyond.
Session 2. Tumor heterogeneity and cancer stem cells/initiating cells
Session 3. Epithelial-mesenchymal transition (EMT): intrinsic regulation and tumor microenvironment
Session 4. Circulating tumor cells (CTC), micro-metastasis, and cancer dormancy
Session 5. Tumor metabolism (glycolysis, redox, hypoxia, autophagy)
Session 6. Pre-metastatic niche and organ-specific metastasis
Session 7. Key signaling pathways in tumor metastasis
Session 8. Epigenetic regulation of tumor metastasis.
COURSE POLICIES

Course Website
Additional details, regular updates to the course schedule and assignments, and announcements will be posted on the course website.

Attendance
Class attendance is mandatory. Excused absences follow the criteria of the UF Graduate Catalog (e.g., illness, serious family emergency, military obligations, religious holidays), and should be communicated to the instructor prior to the missed class day when possible.

Class Decorum
Students are expected to be on time and respectful of others in the classroom.

Policy on Make-Up Work
Students are allowed to make up work only as the result of illness or other unanticipated circumstances. In the event of such emergency, documentation will be required in conformance with university policy. Work missed for any other reason will earn a grade of zero.

Special Needs
Students requiring accommodations must first register with the Dean of Students' Office. The Dean of Students' Office will provide documentation to the student who must then provide this documentation to the faculty member when requesting accommodation. The College is committed to providing reasonable accommodations to assist students in their coursework.

Academic Honesty
Each student is bound by the academic honesty guidelines of the University and the student conduct code printed in the Student Guide and on the University website, available at http://regulations.ufl.edu/chapter4/4017.pdf. Cheating or plagiarism in any form is unacceptable and inexcusable behavior.

Style for Citation
When directly quoting an outside source, the borrowed text must be surrounded by quotation marks. Every quote must include a source. When summarizing an outside source in your own words or citing another person’s ideas, quotation marks are not necessary, but the source must be included.

All references should include the following elements: 1) last names along with first and middle initials; 2) full title of reference; 3) name of journal or book; 4) publication city, publisher, volume, and date; and 5) page numbers referenced. When citing information from the Internet, include the WWW address at the end, with the “access date” (i.e., when you obtained the information), just as you would list the document number and date for all public documents. When citing ideas or words from an individual that are not published, you can write “personal communication” along with the person’s name and date of communication.