

Course Name: Special Topics in Cell Biology: Extracellular Matrix Metabolism in Angiogenesis
[BMS 690 003, 2 credits](#); (Seminar in Biochemistry)

Overall Course Description: This course will emphasize the interactions of cell surface receptors and the extracellular matrix. Discussions will include the integrin receptors, ECM composition in different tissues, the cell microenvironment, cell-cell, cell-matrix interactions, matrix remodeling and turnover, and local paracrine factor signaling with an emphasis on how these processes impact angiogenesis.

Provisional Topics (subject to change):

ECM composition Integrins and ECM ligands Integrin adhesion and its regulation
Adhesion and detachment pathways Cell junction biochemistry and morphology
Cytokine-mediation of cell adhesion MMPs and inhibitors, and remodeling

The course will meet once a week for 2 hours. Weekly supplemental reviews will be provided as background. Each week, one research paper will be assigned and each student will be expected to write a thoughtful one-to-two page critique, due prior to class. In addition, one student will be responsible each week for giving an introduction and overview of the paper under discussion. This will be followed by a round table discussion of the strengths and weaknesses of the paper. Additional suggested guidelines for the critiques are provided below.

Once the class registration list becomes available we will schedule student dates for introduction and overview discussion. All materials will be distributed by email. The paper for a given class (except the first, see below) will be provided at the preceding session. These materials will also be available online (details to follow).

Dates and Times: This course will be held at MMCRI, in the first floor conference room. **The start date for this session will be Wednesday, January 13th.** The course will be held on Wednesday's from 10:00 - 12:00.

Instructors: This session will be conducted by [Cal Vary](#), and [Peter Brooks](#). The above links will provide you with the research areas of interest and emailing information. General questions may be directed to the instructors: varyc@mmc.org, brookp1@mmc.org.

Grading: Grade will be based on three criteria: 1) There will be only Pass/Fail grades for the critiques; failure or late submission of a critique constitutes a fail. Critiques are due by email on the day of class discussion of that paper. **Please put your name and date in your document file name and at the top of the document text.** Deficiencies in the critique will be addressed on a case-by-case basis. 2) Final grades will also be based in part on oral participation. 3) The bulk of the grade will reflect performance on a final exam.

Guidelines:

Discussion: The *introduction and overview* of the paper under discussion should provide any useful background information and introduce the overall objectives of the paper. The *round table discussion* will generally proceed through the paper's methods, data, and conclusions, with individuals asked to discuss strengths and weaknesses of these sections of the paper.

Written critique: The written critique should be prepared as if for peer-review of the paper prior to publication. Students may wish to consider the following:

Major Considerations: 1) Why is this paper important to the particular field of study? Is the study of an incremental nature, or does it provide a new paradigm? Are there major defects or deficiencies? What is the biggest strength? Provide your reasoning for all of the above.

Additional Considerations: 1) Is there new information or concepts that advance knowledge in the field? 2) Does the abstract provide succinct information on objectives and major interpretations, as well as experimental results? 3) Are objectives and background relevant to the work clearly stated? 4) Are experimental procedures pertinent, up-to-date, and clearly described? 5) Are the results completely and clearly described? Are tables, charts, and figures arranged for maximum clarity with descriptive titles and legends? 6) Does the discussion provide accurate and justifiable interpretations of the data, and adequately relate these to the work of others?