Chem 494 Biochemistry of Cancer Spring 2015

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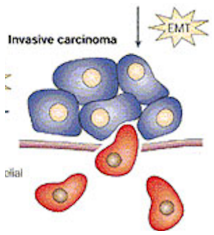
Class Time: 8:00- 8:55 M,W,F

Epithelial Mesenchymal Transition: *EMT represent an important source of the origins of mesenchymal cells which participate in tissue repair and pathological processes including tumor invasion and metastasis. Signaling pathways which lead to activation of EMT supports neoplastic transformation and plasticity of tumor cells as well as provides an interesting therapeutic intervention for cancer.*



Office Hours:

Monday	10:05	Tuesday	9:15	Wednesday	10:05 &1:25
Thursday	By Appt	Friday	10:05		

Course Description: This course will study the cell signaling involved in cancer progression and metastasis, understand the cellular origins and changes involved in cancer development. We will discover the biochemistry of tumor progression, invasion and metastasis as well as investigate the current therapies and drug discoveries of cancer therapeutics. The course will primarily focus on the biochemistry of cancer with an emphasis on the cell biology of the course. This is an advanced topics course in chemistry and independent student work and reading will be required.

Resources:
Textbook Required: The Biology of Cancer by Robert A Weinberg, second edition. Garland Science. *Reading the book is required, not suggested.* Additional readings and papers will be posted on the class webpage or given out in class. VV&P or another biochem book will be helpful for signaling and other background reading.
Website: The website will have ppt handouts, additional readings, page assignments and links both required and suggested.

Grades: There will be two regular and one final examination. Each examination will be normalized to 500 pts each. The cut-off for final grade is A-90%, B-80%, C-70%, D-60% and F-50%.

- Exams (500 points each) — 1500 points
- Cancer Trivia Crack — 130 points
  - Question Turn in (one point each - 26 total)
  - Question Answers (two point each - 52 total)
  - Extra Coin turn in (10 coins for 10 points)
- Group Presentation — 75 points
  - Level 1 introduction 15
  - Level 2 presentation 40
  - Instructor Review Check 10
  - Peer Points possible of 10

Student Group Presentations: Each student will work in a group of three to present material (student selected) covered the week of their presentation. Each presentation will be covered in two formats. Level 1 is a wiki-google entry type introduction of the material and Level 2 is an in depth presentation on new publications and reviews in the field. Each team will have peer evaluations as part of the grade. Specific instructions can be found on the class website.

Trivia Crack (in class version!): Each Monday (highlighted in yellow) the class will answer four simple trivia crack students generated questions. Every Friday prior to the trivia crack quiz, EACH student will submit two multiple-choice questions. Only questions submitted to blackboard will be accepted. Turning both questions is worth one point. Each question will be basic but not too simple. A good set of answers will be one correct, and three correct sounding or correct for another answer. One clear easy answer and three obviously wrong answers will not be accepted. If your question is selected for you will earn a bonus point. COINS: Each student will start with 5 coins. Correctly answering all four will earn an additional coin. Getting your question selected for the quiz will also earn a coin. Good questions will earn a coin. Removing two answer options will cost 3 coins. Replacing a question will cost 2 coins. At the end of the semester, 5 coins will earn 5 extra points, 10 coins will get 10 extra credit points.

Academic Integrity: Review the Student Code of Rights and Responsibilities and Rules of Conduct (http://www.sandiego.edu/conduct/the_code). In particular, familiarize yourself with the Academic Integrity Policy, which is found under "University Policies". You will need your MySanDiego username and password to view the policy.

Tentative Schedule – we will adjust based on progress of the class and pace of discussion.

Date	Topic	Chapter Reading
Mon Jan 26	Introduction to Cancer	Mol Bio/Genetic *Review* 4-11, 14-24, 25
Wed Jan 28	The Nature of Cancer	Ch 2
Fri Jan 30	Nature of Cancer and Cell Signaling	VVP - Chpt 13
Mon Feb 2	Cell Signaling	VVP - Chpt 13
Wed Feb 4	Cell Signaling	VVP - Chpt 13
Fri Feb 6	Molecular Biology and Tumor Viruses	Notes & Chpt 3
Mon Feb 9	Cellular Oncogenes	Chpt 4
Wed Feb 11	Cellular Oncogenes	Chpt 4
Fri Feb 13	***Student Group Presentation***	
Mon Feb 16	Growth Factors, Receptors and Cancer	Chpt 5
Wed Feb 18	Growth Factors, Receptors and Cancer	Chpt 5
Fri Feb 20	***Student Group Presentation***	
Mon Feb 23	Cytoplasmic Cancer Signaling	Chpt 6
Wed Feb 25	Cytoplasmic Cancer Signaling	Chpt 6
Fri Feb 27	***Student Group Presentation***	
Mon Mar 2	Tumor Suppressor Genes	Chpt 7
Wed Mar 4	Tumor Suppressor Genes	Chpt 7
Fri Mar 6	Spring Holiday	
Mon Mar 9	p53 and Apoptosis	Chpt 9
Wed Mar 11	p53 and Apoptosis	Chpt 9
Fri Mar 13	***Student Group Presentation***	
Mon Mar 16	Hypoxia and Warburg Hypothesis	Web Links
Wed Mar 18	Hypoxia and Warburg Hypothesis	Web Links
Fri Mar 20	***Student Group Presentation***	
Mon Mar 23	Transporters and Cancer	Web Links
Wed Mar 25	Transporters and Cancer	Web Links
Fri Mar 27	***Student Group Presentation***	
Mar 30-Apr 6	Spring Break	
Wed Apr 8	Cell Immortalization and Tumorigenesis	Chpt 10
Fri Apr 10	Cell Immortalization and Tumorigenesis	Chpt 10
Mon Apr 13	Multi-Step Tumorigenesis	Chpt 11
Wed Apr 15	Multi-Step Tumorigenesis	Chpt 11
Fri Apr 17	***Student Group Presentation***	
Mon Apr 20	Invasion and Metastasis	Chpt 14
Wed Apr 22	Invasion and Metastasis	Chpt 14
Fri Apr 24	***Student Group Presentation***	
Mon Apr 27	Tumor Immunotherapy	Chpt 15
Wed Apr 29	Rational Treatment of Cancer	Chpt 16
Fri May 1	***Student Group Presentation***	
Mon May 4	Rational Treatment of Cancer	Chpt 16
Wed May 6	Cancer Chemotherapy Drug Design	Web Links
Fri May 8	***Student Group Presentation***	
Mon May 11	Cancer Chemotherapy Drug Design	Web Links
	Final Exam	

Mondays highlighted in yellow are Trivia Crack days. Question turn in is due the preceding Friday via Bb.