CAMB 701-301
Course Syllabus
Fall 2013
Thursday 11-1PM, BRB 801
September 9 - December 19, 2013
Directors: Sandra Ryeom  [sryeom@upenn.edu] BRB II/III 711
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**Monday 9/9/13 [3:30-5pm]
- Ellen Pure Overview Lecture  (tumor/stromal interactions, introduction to the tumor microenvironment)

**SPECIAL DAY/TIME FOR 1ST CLASS (BRB 801).

9/12/13
“Nf1-dependent tumors require a microenvironment containing Nf1+/- and c-kit-dependent bone marrow.”

“Neurofibromas in NF1: Schwann cell origin and role of tumor environment.

Background topics to be covered:
-NF1 disease
-mouse models
-Mast cells

9/19/13

Background topics to be covered:
-micro RNAs
-PTEN signaling

9/26/13
“Enzymatic targeting of the stroma ablates physical barriers to treatment of pancreatic ductal adenocarcinoma” Provenzano et al. .Cancer Cell 2012. (Sunil Hingorani lab)

Background topics to be covered
-other matrix proteins
-the role of matrix in cancer
-mechanical forces and matrix

10/3/13
-Celeste Simon Overview Lecture (Angiogenesis and hypoxia)
10/10/13

Background topics
-pericyte biology
-hypoxia techniques

10/17/13

Background topics
-VEGF isoforms
-prostaglandin biology
lymphatic versus vascular endothelium

10/24/13
-Bob Vonderheide overview lecture (immunotherapy, immune surveillance)

10/31/13
“Glioblastoma stem-like cells give rise to tumour endothelium” Wang et al... Nature 2010 (Vivian Taber lab) – 2 papers back to back in Nature on this topic; 2nd paper: Tumour vascularization via endothelial differentiation of glioblastoma stem-like cells. Ricci-Vitaiani et al., Nature 2010 (Ruggero De Maria lab).

Background topics
-GBM and stem cells

11/7/13
-“The perivascular niche regulates breast tumour dormancy” Gahjar et al., Nature Cell Biology 2013 (Mina Bissell lab).

Background topics
-mechanisms of tumor dormancy

11/14  Tregs

Background topics
-T regs, T cell subsets
11/28/13

Background topics
-Senescence (Replicative, Oncogene, & Damage)
-Markers and Pathways
-Intrinsic vs. extrinsic mechanisms
-Relevance to cancer

12/5/13
*-Angiotensin II Drives the Production of Tumor-Promoting Macrophages*. Cortez-Retamozo, et al., Immunity 38, 296–308, February 21, 2013

Background topics
-Macrophage origin & function
-Macrophage polarity
-Relevance to cancer
-Macrophage directed Therapies

12/12/13

Background topics
-Establishment of metastatic niche
-Mechanisms of Tissue tropism

12/19/13

Background topics
-Chemo-protective mechanisms
-dormancy mechanisms