BBMB 400 **Senior Seminar** **Spring 2009**

Instructors: Leena Knight, Dayle Smith, Dan Vernon, and Jim Russo (Coordinator)
Class meets: In Rm S-142 M 10-10:50 am ; W 11-11:50 am.

Attendance: Required. This is a presentation and discussion class. Your active participation includes: reading papers in advance of discussions; asking meaningful questions; and contributing to discussions. While there are no exams, this is a graded class for 2 credits. We will meet on most W and some M throughout the semester.

Goals: The Senior Seminar is a capstone course which presents an opportunity for you to integrate and apply what you have learned in the core BBMB classes of Biochemistry, Biophysics, and Molecular Biology. With a focus on current research, the organization of the course will resemble a graduate level seminar, and will provide you with an opportunity to:
1. expand your ability to assess, critique, and explain the primary research literature in a journal-club format.
2. present a 35 - 40 minute seminar on your senior research project,.

Journal Club Papers: There are four papers that span the range of approaches used in the molecular and cellular life sciences. The discussion of each of these papers will be "facilitated" by a team of 3 students. Your team's presentation should include:
- who did the work and why the work was done
- what were the hypotheses, if any, that were tested
- what techniques were used
- what are the results and the authors' interpretations of the results
- what other experimental approaches could have been used
- to what future work does this paper lead us (if this is true, then…)

Senior Research Seminar: You will have one class period as a forum to present your own senior research project. You will each present an organized, well-prepared, 35-40 minute seminar which will include:
- a full introduction to supply background and set up the rationale for the project
- a description of the hypothesis being tested, question being addressed, and specific goals
- experimental methodology, techniques, instrumentation used, assay design
- visuals showing key experimental data, and data analysis
- interpretation of results, discussion of successes, shortcomings, and significance of the work
- future directions

Your seminar should be prepared in consultation with your BBMB 490/8 Senior Research Advisor.

Assessment:	Senior Research Seminar	60 %
	Paper discussion leader	20 %
	Class attendance/participation	20 %

SYLLABUS BBMB 400 Sen Sem 2009

21 Jan W	Course intro
	Journal Club Papers
28 Jan W	**Paper#1**: **Genomics & Proteomics:** A combined transcriptome and proteome survey of malaria parasite liver stages. *PNAS* 105:505-310, 2008. (JER) Presenters: 1) 2) 3)
4 Feb W	**Paper#2 From Genes to Developmental Structures:** A retrotransposon-mediated gene duplication underlies morphological variation of tomato fruit. *Science* 319:1527-1530, 2008 AND A conserved molecular framework for compound leaf development. *Science* 322:1835-1839, 2008. (DMV) Presenters: 1) 2) 3)
11 Feb W	**Paper#3**: **Drug-Target Interactions:** Taxol allosterically alters the dynamics of the tubulin dimmer and increases the flexibility of microtubules. *Biophys J.* 95:3252-3258, 2008. (DMS) Presenters: 1) 2) 3)
18 Feb W	**Paper#4**: **Neurosignaling:** Bursicon functions within the *Drosophila* CNS to modulate wing expansion behavior, hormone secretion, and cell death. *J. Neurosci.* 28:1439-14391. 2008. (LSK) Presenters: 1) 2) 3)
	Senior Research Seminars
23 Feb M	Reid Bennett (Kendra)
25 Feb W	Andrew Richards (Jim)
2 Mar M	**Visiting Educator: Barry Stoddard (Chem, '85), FHCRC** Structures of the Rare-Cutting Restriction Endonuclease NotI Reveal a Unique Metal Binding Fold Involved in DNA Binding. *Structure* 16: 558-569, 2008.
4 Mar W	Ysbrand Nusse (Leena)
9 Mar M	Kellie Wutzke (Kendra)
11 Mar W	Jillian Varonin (Jim)
Spring Break	
8 Apr W	Simon Quay (Leena)
13 Apr M	Brigitte Woods (Dan)
15 Apr W	Jessica Bruhn (Jim)
20 Apr M	Sam Moulton (Leena)
22 Apr W	Josiah Hanson (Chris)
27 Apr M	Calvin Davis (Dayle)
29 Apr W	Etasha Bhatt (Tom)
6 May W	Senior Lunch