

Spring 2015 PMCB JOURNAL COLLOQUIUM TOPICS

1. PCB 7922 Genetic modification of plant cell wall architecture for the production of fuels and chemicals

Environmental concerns, finite supplies of fossil fuels and the desire to stimulate local economies have led to an interest in using plants as a source of fuels and chemicals. While the use of starch and sucrose for so-called first-generation biofuels is economically feasible, ethical concerns have been raised over the use of food as feedstocks for transportation fuels. The use of vegetative biomass as a source of fermentable sugars bypasses these concerns, but is technically much more challenging due to the inherent recalcitrance of plant cell walls. Several different approaches are being explored to make cell walls more amenable to bioprocessing, which include the use of mutants and transgenics with altered cell wall composition. In some instances this compromises plant growth and development. As part of this journal club will examine the current literature to evaluate various approaches in both model species and crop plants.

INSTRUCTORS: Wilfred Vermerris (wev@ufl.edu)

REGULAR MEETING TIME: Mondays, 1:00 - 2:00 pm, CGRC 351A

CLASS SIZE LIMIT: 14 students

REGISTRATION: Departmentally controlled, request registration with elianak@ufl.edu

CLASS SYLLABUS: [click here](#)

2. PCB 6695 PopBio (aka Seminar Evolutionary Biology)

PopBio is a forum for graduate students across campus to present work in progress and get feedback from colleagues. Each week one student gives an informal research seminar. Recent topics have included molecular population genetics, quantitative genetics, the evolution of genome architecture, and phylogenetics. Students gain experience in presenting research, critically evaluating research, and the breadth of research in evolutionary biology going on here at UF.

INSTRUCTORS: Stuart McDaniel (stuartmcdaniel@ufl.edu)

REGULAR MEETING TIME: Fridays, period 9 (4:05 - 4:55 pm), building PSY room 129

CLASS SIZE LIMIT: 14 students

REGISTRATION: *you can self register, section 1466*

CLASS SYLLABUS: [click here](#)

3. MCB 6772 Advanced Topics Cellular Biology

Specific topics about cell structure and function published in recent journal articles and reviews with microbiological interest will be considered in a comparative discussion of animal and plant systems. *The specific topic for this semester will be cell surface receptors.* We will discuss how cell surface receptors were discovered and how they are involved in transferring extracellular signals. The role of cell surface receptors in host-microbe interactions will be the focus of this semester. The course objectives are:

- To develop an understanding of current advances and approaches in the study of the cell biology of eukaryotes.
- To gain insight on differences between plants and animals pertaining particularly to their susceptibility or capacity to resist microbial pathogens.

INSTRUCTORS: Peter Kima (pkima@ufl.edu) & Zhonglin Mou (zhlmou@ufl.edu)

REGULAR MEETING TIME: Tuesdays & Thursdays; 8:30 AM to 10:00 AM (**classes go only until March 10**); Room 1054, Microbiology and Cell Science Building

CLASS SIZE LIMIT: 14 students

REGISTRATION: Departmentally controlled (contact Eliana or the MCS Department to register)

CLASS SYLLABUS: [click here](#)

4. PCB 7922 Quantitative Genetic Methods

Quantitative genetic methods are identifying an increasingly large number of genes that regulate complex traits. In parallel, genomics is providing a wealth of data that is unprecedented in amount and diversity. As the ability to characterize more and more regions of the genome collide with approaches that were originally designed for analysis of relatively few loci, a number of challenges are becoming evident. These range from issues of multiplicity of testing and how to generate reliable genotypes from next generation sequencing data. In this journal club we will discuss new bioinformatics approaches to derive genotyping data from next generation sequencing, and ways by which it can be used in association studies and other approaches aimed to dissect complex traits.

INSTRUCTORS: Matias Kirst (mkirst@ufl.edu) and Brad Barbazuk (bbarbazuk@ufl.edu)

REGULAR MEETING TIME: TBD

CLASS SIZE LIMIT: 14 students

REGISTRATION: Departmentally controlled (contact Eliana)

CLASS SYLLABUS: [click here](#)