Biophysics 205
Computational and Functional Genomics

Course website:  http://llama.med.harvard.edu/courses/Biophysics205/Info/syllabus_2008.htm

Course Description:
This is an upper level critical paper reading and discussion course in the areas of experimental and computational functional genomics. Introductory lectures will be interspersed within the topic blocks, with most of the meeting time devoted to critical discussion of assigned journal articles. Students will be responsible for presenting assigned articles throughout the semester and for leading class discussions of those articles. There will be written and oral presentations of final student proposals at the end of the term.

Faculty:
Martha Bulyk  mlbulyk@receptor.med.harvard.edu
Fritz Roth  froth@hms.harvard.edu
Shamil Sunyaev  ssunyaev@rics.bwh.harvard.edu

Teaching Assistant:
Caleb John Kennedy  caleb_kennedy@hms.harvard.edu

Requirements:
Molecular biology and introductory statistics.
Harvard BS 50 or BS 52 or the equivalent.
Permission of the instructors is required.
Enrollment will be limited to 20 students, with preference given to students in the Biophysics Program.

Time and Place:
3:00-4:30 PM, Mondays and Wednesdays; Folin-Wu room

Note:  There will be no class on Monday 2/18 (Presidents Day), Monday 3/24 (Harvard Spring Break), and on Wednesday 3/26 (Harvard Spring Break).

Please note:  there WILL be class on Monday 4/16 (Patriot’s Day).
Readings:
The assigned readings for the course will be the journal articles that we discuss. It is expected that all participants read the articles as well as any Supplementary Reading Materials to accompany the assigned article in advance of class.

There is no required textbook for the course. Review articles will be posted throughout the term to accompany the lectures. We do recommend the following two optional textbooks to supplement the material presented in the course:


Student Presentations:
Each participant will be expected to present at least two papers during the course. Presentations will be brief (~10 minutes) with group discussion to follow, such that the total time spent on a single paper is ~30 minutes. We will require “chalk talk” presentations (no PowerPoint!), in order to encourage informal, interactive discussion. All participants are expected to read all assigned papers and contribute to the discussions.

Written Research Proposal:
At the end of the course, participants are expected to write a 3-5 page research proposal related to one of the discussion topics, due in May. This will be followed by a brief (15-20 minutes) oral presentation to the class, allowing ~10 min group discussion of the proposal. Presentations are tentatively scheduled to take place in class on May 5, 7, 12, and 14.

Office Hours:
Office hours can be arranged by appointment. Presenters are encouraged to meet with the Teaching Assistant before class if there are questions regarding any topics or techniques covered in the assigned paper.

Grading:
1/3 class participation and preparedness
1/3 assigned paper presentations
1/3 end-of-term research proposal