Syllabus

01/10 – Introduction to computational and molecular biology
01/12 – Statistical modeling of biopolymer sequences (Eric)
01/19 – Hidden Markov models for gene finding: the forward-backward algorithm (Eric)  
         HW1 out
01/24 – Comparative gene finding: pared HMM (Eric)
01/26 – Molecular evolution: phylogenetic HMM (Eric)
01/31 – Motif detection, the EM algorithm (Eric)
02/02 – Bayesian motif models, Monte Carlo algorithms (Eric)  
         HW1 due, HW2 out

02/09 – 2-point linkage analysis (Eric)
02/14 – SNPs and haplotype inference (Eric)
02/16 – QTL mapping (Eric)
02/21 – Pedigree inference (Eric)
02/23 – Introduction to array CGH data (Eric)

02/28 – Gene expression and microarrays (Ziv)
03/02 – Normalization and differentially expressed genes (Ziv)  
         HW2 due, HW3 out
03/14 – Clustering (Ziv)
03/16 – Clustering (Ziv)  HW3 due, HW4 out
03/21 – Classification (Ziv)
03/23 – Classification (Ziv)
03/28 – Gene expression dynamics (Ziv)
03/30 – Invited talk  HW4 due
04/04 – Bayesian networks (Ziv)  Project proposals due
04/06 – PRMs and module networks (Ziv)
04/11 – CRFs and probabilistic graphical models (Eric)
04/13 – Overview of approximate probabilistic inference:
         Variational and sampling (Eric)
04/18 – Network motifs (Ziv)
04/20 – Protein interaction (Ziv)
04/25 – Project presentations
04/27 – Project presentations