

Day, Date	Topic	HG Chpt Section	Miller et al pp	More Readings
T, Jan 15	Is creative pedagogy an oxymoron? What is a genome? What do we mean by functional? Goals and basic approaches of comparative genomics. How do you decide what is functional in genomic DNA? What are the features and limitations of traditional biochemical and genetic approaches?	1	15-17	
R, Jan 17	Resources for comparative genomics	6	37-43	Kuhn et al 2007, Blankenberg et al 2007
T, Jan 22	Seminar from Jenny Graves at 4 pm, Berg Auditorium, Life Sciences Bldg			
R, Jan 24	How do biological sequences change over time? How do we detect evidence of selection?	1	28-36	Seipel et al., Kreitman Ann Rev
T, Jan 29	What is an alignment, and how do you align biological sequences?	2	43-47	Altschul et al, Pearson chapter
R, Jan 31				
T, Feb 05	What sequences should be compared to find different functions? What is the "right" phylogenetic span?	3	36-37	
R, Feb 07				
T, Feb 12				
R, Feb 14	What is the pace and meaning of evolution in proteins?	4	17-21	Waterston et al. mouse genome
T, Feb 19				
R, Feb 21				
T, Feb 26	..Which proteins provide adaptive function?	4	27-28	McDonald & Kreitman 1991, Akey TIG
R, Feb 28				Neilsen et al
T, Mar 04	..How do human genes become mal-adaptive?	4		Gibbs et al. rhesus, DiRienzo et al
R, Mar 06	First project due			
Mar 10-14	Spring Break			
T, Mar 18	What noncoding DNA sequence are important?	5	21-27	Hardison TIG
R, Mar 20	..Ultraconserved elements	5		Bejerano et al Science
T, Mar 25	..Evolution within noncoding genes	5		
R, Mar 27	..Evolution and function in gene regulatory sequences	5		Pennachio et al Nature
T, Apr 01	..Prediction and tests of gene regulatory sequences	5		Wang et al GenRes
R, Apr 03	What is learned about function when sequences			Birney 2007
T, Apr 08	no class meeting			
R, Apr 10	no class meeting			
T, Apr 15	..Transcripts			Birney 2007, Gerstein et al 2007
R, Apr 17				
T, Apr 22	..Transcriptional regulation			Birney 2007, Kim et al. 2005, 2007
R, Apr 24				Ahituv et al. 2007
T, Apr 29	..Replication			Birney 2007
R, May 01				
May 5-9	Final Exams (second project due May 5)			
30 classes				