BIO 510 Schedule – Fall 2002

August 28:  Introduction to lab; check out paraphernalia; lecture on DNA preparations; genomic DNA prep I
August 30:  Lecture - Enhancers/enhancer trap analysis

September 2:  Labor Day holiday
September 4:  Genomic DNA prep II
September 6:  Lecture – Restriction enzymes and analysis; gel electrophoresis; Southern blotting

September 9:  Genomic DNA prep III; DNA concentration determination; restriction for Southern blot analysis
September 11:  Agarose gel electrophoresis; EtBr stain/photo; Southern blotting
September 13:  Lecture - Probe labeling; hybridization; autoradiography; inverse PCR?
September 16:  Probe labeling; prehybridization/hybridization; restriction for inverse PCR
September 18:  Blot washing/autoradiography; ligation for inverse PCR
September 20:  Lecture - PCR; inverse PCR; ligation

September 23:  Autoradiogram development/interpretation; inverse PCR
September 25:  Agarose gel analysis/purification of PCR products
September 27:  Lecture – Bacterial transformation; DNA minipreps and analysis; restriction mapping

September 30:  Ligation of PCR products with vector; lecture on $\beta$-galactosidase histochemistry of flies
October 2:  Transform bacteria; $\beta$-galactosidase staining of fly organs
October 4:  Academic Holiday  
[October 3 or 4: must visit lab to pick colonies]

October 7:  Plasmid minipreps; restriction
October 9:  Agarose gel analysis of restriction digests
October 10:  Lecture – DNA sequencing

October 14:  DNA sequencing I:  dideoxy sequencing reactions
October 16:  DNA sequencing II:  gel electrophoresis (load/run/dry/autoradiograph)
October 18:  Lecture - DNA sequencing; bioinformatics

October 21:  Autoradiogram develop/interpret   
[EXAM 1]
October 23:  Bioinformatics:  BLASTN; FlyBase/BDGP informatics
October 25:  Lecture – Recovery of DNA; annealing oligonucleotides

October 28:  Kinase oligos; anneal, ligate oligos; digest recipient plasmid
October 30:  Recovery of concatemerized oligos; dephosphorylate recipient plasmid
November 1:  Lecture – oligonucleotide cloning; luciferase activity measurements

November 4:  Recover oligos; calibrate oligo and plasmid concentrations
November 6:  Ligate concatemerized oligos into plasmid; mock luciferase assay
November 8:  Lecture - Transformation, transfection, reporter selection

November 11:  Transformation of constructs into bacteria
November 13:  Pick colonies; mock cell line transfection
November 15:  Lecture - Maxiprep; CsCl preparation of DNA

November 18:  PCR screening of colonies
November 20:  Agarose gel analysis of PCR, select positive colonies
November 22:  Lecture – Making nuclear extracts for promoter analysis

November 25:  Making maxipreps of constructs
November 27:  Making maxipreps of constructs
November 29:  Thanksgiving holiday

December 2:  Transfection of cell line with constructs
December 4:  Treat cells with hormone and harvest cells
December 6:  Lecture - Gel shift analysis of promoter sequences

December 9:  Luciferase assay of harvested cell lysate
December 11:  Lab clean up
December 13:  Lecture - Review   
(Last day of class)

December 16, 10:30 AM:  EXAM 2