Regulation of Gene Activity in Eukaryotes (BIMM 112)

James T. Kadonaga – Winter 2011

Tues./Thurs. 12:30-1:50 pm; Center Hall room 105

Date	Topic
Jan. 4	1. Introduction and Overview; Scientific Knowledge; Techniques in Chromatin and Gene Expression
Jan. 6	2. Fundamentals of Chromatin Structure
Jan. 11	3. Linker Histones; Histone Variants; HMG Proteins
Jan. 13	4. Covalent Modifications of the Histones
Jan. 18	5. CpG Methylation; Heterochromatin; Epigenetics; Position-effect Variegation
Jan. 20	6. Topoisomerases and other Key DNA-directed Enzymes
Jan. 25	7. Chromatin Assembly
Jan. 27	8. Chromatin Remodeling
Feb. 1	9. Critical Analysis of Chromatin Papers
Feb. 3	10. **Midterm #1**
Feb. 8	11. Basal Transcription by RNA Polymerase II Simple Kinetics and Thermodynamics
Feb. 10	12. The RNA Polymerase II Core Promoter
Feb. 15	13. Sequence-specific DNA-binding Transcription Factors
Feb. 17	14. Transcriptional Enhancers
Feb. 22	15. Transcriptional Elongation and Cotranscriptional Steps in Gene Expression (*Lecture by Prof. Katherine Jones, Salk Institute)
Feb. 24	16. Critical Analysis of Transcription Papers
Mar. 1	17. **Midterm #2**
Mar. 3	18. RNA-based Mechanisms of Gene Regulation
Mar. 8	19. Transcriptional Regulation in Disease (*Lecture by Prof. Beverly Emerson, Salk Institute)
Mar. 10	20. Summary, Synthesis, and Perspectives
Mar. 15 (Tuesday)	**Final Exam** (11:30 am to 2:30 pm)