BMB 801 Introduction to Molecular Biology Fall 2008 9:10-10:00 MWF 101 BCH

Background reading about methods and model systems is presented in Chapters 21 and 22

Date	Instructor	Text: Molecular Biology of the Gene, VIth Ed. Watson, Losick, Levine et al.
		DNA structure and topology
1. August 25th	Henry	1. DNA structure Ch. 2, 6
2. August 27th	Henry	2. Chromosomes and chromatin Ch. 7
3. August 29th	Henry	3. DNA topology and topoisomerases
4. September 3rd	Henry	4. DNA topoisomerases
		DNA modifying enzymes
5. September 5th	Henry	5. Restriction endonucleases, polynucleotide kinase, endo/exonucleases
6. September 8th	Henry	6. other DNA modifying enzymes
7. September 10th	Henry	7. DNA ligases
		DNA Replication Ch. 8
8. September 12th	Kaguni	8. DNA primases
9. September 15th	Kaguni	9. DNA helicases
10. September 17th	Kaguni	10. DNA polymerases
11. September 19st	Kaguni	11. DNA polymerase clamps and clamp loaders
12. September 22nd	Kaguni	12. Bacterial replication Proteins at the replication fork
13. September 24th	Kaguni	13. Regulation of replication
14. September 26th	Kaguni	14. Mitochondrial DNA replication
15. September 29th	Weinreich	15. Eukaryotic replication Proteins, the SV40 virus model
16. October 1st	Weinreich	16. Yeast DNA replication: origins and regulation
17. October 3rd	Weinreich	17. Telomeres and centromeres
18. October 6th	Arnosti	18. Reverse transcriptase and retroviruses Ch. 11p. 347-350
October 7th		**Midterm 1 (lectures 1-16) 7:30-9:00 p.m.**
19. October 8th	Arnosti	19. Recombination Ch. 1, 10
20. October 10th	Arnosti	20. Recombination at replication forks; specialized recombination Ch. 11
21. October 13th	Arnosti	21. DNA damage and repair Ch. 9
22. October 15th	Arnosti	22. Overview of transcription, methods, polymerase Ch. 12, 16, 17
23. TBA	Arnosti	23. Prokaryotic and initiation and elongation, sigma factors
24. TBA	Arnosti	24. The *lac* operon
25. October 22nd	Arnosti	25. Termination and attenuation
26. October 24th	Arnosti	26. Transcription in eukaryotes Ch. 19, 20
27. October 27th	Arnosti	27. RNA polymerase II basal factors and initiation, RNA polymerases I and III
28. October 29th	Arnosti	28. Transcriptional activators
29. October 31st	Arnosti	29. Transcriptional repressors
30. November 3rd	Arnosti	30. Chromatin Ch. 7
31. November 5th	Arnosti	31. Chromatin part 2
32. November 7th	Arnosti	32. Genome-wide and developmental control of transcription
33. November 10th	Arnosti	33. Capping and polyadenylation
November 11th		**Midterm 2 (lectures 17-32) 7:30-9:00 p.m.**
34. November 12th	Arnosti	34. pre-mRNA splicing Ch. 13
35. November 14th	Arnosti	35. Regulation of splicing
36. November 17th	Arnosti	36. Catalytic RNA
37. November 19th	Arnosti	37. RNA editing
38. November 20th (7:30 p.m.)	Arnosti	38. mRNA degradation
39. November 21st	Arnosti	39. miRNA and RNAi Ch. 18
40. November 24th	Arnosti	40. Translation Ch. 14
41. December 1st	Arnosti	41. The ribosome; structure and function
42. December 3rd	Arnosti	42. Alternative codes
43. December 5th	Arnosti	43. Translational regulation
December 10th		**Final Exam (cumulative) 7:45 a.m. – 9:45 a.m.**