MCB 210 - Spring 2018 - COURSE SCHEDULE

Lecture	Date	Day	Lecturer & Topic
HOLIDAY	Jan. 15	M	Martin Luther King, Jr. Day
1	Jan. 16	TU	K. Collins— Nucleic acid structure and recognition
2	Jan. 18	TH	K. Collins— DNA polymerases: structures, activities, functions, evolution & design
	Jan. 19	F	Discussion Sessions #1
3	Jan. 23	TU	K. Collins— Assembly of and activities at DNA replication forks
4	Jan. 25	TH	K. Collins— DNA replication termination, initiation, & cell cycle regulation
	Jan. 26	F	Discussion Sessions #2
5	Jan. 30	TU	K. Collins— DNA damage and repair
6	Feb. 1	TH	K. Collins— DNA repair (continued)
	Feb. 2	F	Discussion Sessions #3
7	Feb. 6	TU	D. Rio— General and site-specific recombination
8	Feb. 8	TH	D. Rio— Transposition, retrovirus integration, V(D)J recombination, other DNA rearrangements, genome organization
	Feb. 9	F	Discussion Sessions #4
9	Feb. 13	TU	K. Collins— Nucleus and nucleoid organization. Nucleosomes: fundamental properties, modifications, and variants.
10	Feb. 15	TH	K. Collins— Replication-coupled nucleosome assembly, nucleosome remodeling, nucleosome exchange; chromatin compaction and higher-order organization
	Feb. 16	F	Discussion Sessions #5
HOLIDAY	Feb. 19	M	Presidents' Day
11	Feb. 20	TU	D. Rio— Prokaryotic mechanisms of transcription, RNA polymerase and its regulation
EXAM 1	Feb. 20	TU	On Collins' material ONLY; Room TBA, 6:30-9:30 PM
12	Feb. 22	TH	D. Rio— The eukaryotic transcriptional machinery and chromatin in gene regulation
	Feb. 23	F	Discussion Sessions #6
13	Feb. 27	TU	D. Rio— Enhancers, activators, repression, and regulatory motifs
14	Mar. 1	TH	D. Rio— pre-mRNA splicing I: discovery, mechanism and structure, fidelity and specificity
	Mar. 2	F	Discussion Sessions #7

15	Mar. 6	TU	D. Rio— pre-mRNA splicing II: alternative splicing, RNA-binding proteins and the regulation of splice site selection, genome-wide approaches
16	Mar. 8	TH	D. Rio— Other RNA processing reactions: capping, polyadenylation, RNA editing, RNA degradation pathways, NMD (nonsense-mediated decay)
	Mar. 9	F	Discussion Sessions #8
17	Mar. 13	TU	D. Rio— Catalytic RNA, ribozymes, aptamers; riboswitches – RNA-ligand interactions
18	Mar. 15	TH	D. Rio— RNA interference (RNAi), small RNA pathways, microRNAs, piRNAs, and siRNAs
	Mar. 16	F	Discussion Sessions #9
19	Mar. 20	TU	J. Thorner— Biochemical basis of nucleocytoplasmic trafficking and its control
20	Mar. 22	TH	J. Thorner— Regulation of translation and metabolism by the TORC complexes
	Mar. 23		Discussion Sessions #10
HOLIDAY			Spring Recess (Mon. Mar. 26 - Fri., Mar. 30)
EXAM 2	Apr. 2	M	On Rio material ONLY; Room TBA, 6:30-to-9:30 PM
21	Apr. 3	TU	J. Thorner— Protein folding and acquisition of protein function *in vivo*; protein precursor processing, zymogen activation, intein splicing
22	Apr. 5	TH	J. Thorner— Protein degradation and other functions of the ubiquitin-proteasome system; SUMO and other ubiquitin-like proteins; autophagy
	Apr. 6	F	Discussion Sessions #11
23	Apr. 10	TU	J. Thorner— Signal transduction mechanisms: receptors, scaffolds, adaptors, anchoring proteins; second messengers
24	Apr. 12	TH	J. Thorner— G-proteins: diversity, structure, mechanism, function and regulation
	Apr. 13	F	Discussion Sessions #12
25	Apr. 17	TU	J. Thorner— Protein kinases: diversity, structure, mechanism, function and regulation
26	Apr. 19	TH	J. Thorner— Phosphoprotein phosphatases: diversity, structure, mechanism, function and regulation
	Apr. 20	F	Discussion Sessions #13
27	Apr. 24	TU	J. Thorner— Modulation of transcription by extracellular and intracellular signaling pathways
28	Apr. 26	TH	J. Thorner— Control of cell proliferation; molecular basis of cancers; apoptosis
	Apr. 27	F	Discussion Sessions #14
EXAM 3	May 10	TH	On Thorner material ONLY (3-to-6 PM); Room TBA (probably 215 Dwinelle)