

BIOM555 - REGULATION OF THE GENOME: SPRING 2018-

Lectures:

Austrian Auditorium, CRB: Tuesdays/Thursdays: 9:00 am – 10:30 am

Small Group Discussions (6 sessions):

Thursdays from 11 am -12 pm ~ 2 sessions starting on January 18 through April 26.

Session 1: BRB 701; **Session 2:** BRB 801

Thursdays from 3:30 pm - 4:30 pm ~ 2 sessions starting on January 18 through April 26.

Session 3: Stellar Chance 204; **Session 4:** Stellar Chance 104 (except for April 19, in Stellar Chance 301)

Fridays from 11 am – 12 pm ~ 2 sessions starting on January 19 through April 27.

Session 5: BRB 1413 BRB (except for February 2 and 23, in Blockley 1311)

Session 6: Stellar Chance 204 (except for February 23 and March 16, in Stellar Chance 1001)

Course Directors:

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Section 1 – Genome Maintenance

January 11: Course Introduction (Klaus Kaestner and Zhaolan (Joe) Zhou)

January 16: Regulation of DNA Replication (Paul Lieberman)

January 18: DNA Repair and Cell Cycle Checkpoints I (Eric Brown)

January 23: DNA Repair and Cell Cycle Checkpoints II (Eric Brown)

January 25: Telomere Function (Brad Johnson)

Section 2 – Transcription

January 30: Prokaryotic Transcriptional Regulation I (video by Mark Goulian)

February 1: Prokaryotic Transcriptional Regulation II (video by Mark Goulian)

February 6: Genomics (Klaus Kaestner)

February 8: Eukaryotic Gene Transcription I (Ken Zaret)

February 13: Eukaryotic Gene Transcription II (Ken Zaret)

Section 3 – Chromatin Modifications

February 15: DNA Modifications (Zhaolan (Joe) Zhou)

February 20: Nucleosome Structure (Ben Black)

February 22: Genome Editing (Jorge Henao-Mejia)

February 27: Histone and Chromatin I (Shelley Berger)

March 1: Histone and Chromatin II (Shelley Berger)

March 6 & 8: Spring Break

March 13: REVIEW SESSION FOR EXAM (TAs)

March 15: MIDTERM, IN CLASS

Section 4 – Chromatin Regulation

March 20: In the context of Chromatin-Chromatin Interactions (Gerd Blobel)

- March 22:** In the context of Metabolism (Katy Wellen)
March 27: In the context of Nuclear Architecture (Maya Capelson)
March 29: Polycomb Regulation (Roberto Bonasio)
April 3: In the context of Imprinting (Marisa Bartolomei)
Section 5 – Post-transcriptional Regulation
April 5: miRNAs/siRNAs (Zissimos Mourelatos)
April 10: Long non-coding RNAs (Montserrat Anguera)
April 12: RNA editing (Tom Jongens)
April 17: RNA processing I (Kristen Lynch)
April 19: RNA processing II (Kristen Lynch)
April 24: Translational Control and RNA Localization I (Peter Klein)
April 26: Translational Control and RNA Localization II (Peter Klein)

May 1: REVIEW SESSION FOR EXAM (TAs)

May 3: FINAL EXAM, IN CLASS

General References for Review (Library/Web)

Molecular Biology of the Cell (Alberts et al.)

<http://www.ncbi.nlm.nih.gov/books/bv.fcgi?call=bv.View..ShowTOC&rid=mboc4.TOC&depth=10>

Molecular Cell Biology Lodish et al. (older editions are by Darnell et al.)

<http://www.ncbi.nlm.nih.gov/80/books/bv.fcgi?call=bv.View..ShowTOC&rid=mcb.TOC>

Genes VIII Benjamin Lewin

Lecturers: (Area code is 215 for all phone numbers)

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GRADES

2 EXAMS: midterm 30%, final 40%

DISCUSSION SECTION (STUDENTS MUST CHOOSE ONE DISCUSSION SESSION AND ATTEND THAT SESSION EACH WEEK. ATTENDANCE AND PARTICIPATION REQUIRED): 30%