Biol. 445
Cancer Biology
Spring Semester 2017
Wilson Hall 107: T, Th 2-3:15 PM
Instructors:
Professor Bob Duronio (3350 Genome Sciences Building)
duronio@med.unc.edu
Professor Mark Peifer (521 Fordham Hall) peifer@unc.edu
TA Ricardo Rivera-Soto rivera21@email.unc.edu

Office hours: See course front page for times and days.
http://courses.bio.unc.edu/2017Spring/Biol445/

Required text:
It is available for purchase in the Student Stores or from other sources--Used texts are often available at a reduced price.

The required reading is indicated below. For each class period complete the Required Reading along with the Lecture Guide BEFORE class, and complete the accompanying online quiz on this material in Sakai. The Lecture Guide and the Powerpoints are found on the “Lecture guides/Powerpoints” section of the main course website

CHECK BACK AS ASSIGNMENTS MAY CHANGE AS SEMESTER PROCEEDS

Online Lecture and reading to complete BEFORE the first day of class:
Basic properties of cancer cells/multigenic nature of cancer/basic genetics
   Online lecture: https://unc.voicethread.com/share/6417683/
   Plus Weinberg Chapt. 1, pp12-13, Chapt 2.1-2.5 (pp. 31-41), Chapt. 5.1 (pp. 131-135), Chapt. 11.1-11.5 (pp. 439-458)

Thursday January 12
Viral oncogenes—the story of src (MP)
Weinberg Chapt. 3.1-3.3 (pp. 71-79), 3.5-3.13 (pp 82-102), Chapt. 5.2 (pp, 135-138), 5.9 (pp. 161-165)


**Tuesday January 17**

Current thoughts about src function (MP)
Weinberg Chapt. 6.3 (pp. 182-188)

**Thursday January 19**

The discovery of cellular oncogenes—the story of ras (MP)
Weinberg Chapt. 4.1-4.4 (pp. 103-110; 112-117), Chapt. 5.10 (pp. 165-169).

**Tuesday January 24**

How did model organisms inform our understanding of ras function (MP)
Weinberg Chapt. 6.2 (pp. 180-182), 6.4-6.5 (pp. 188-192)

**Thursday January 26**

Course Exercise 1-TBA

**Tuesday January 31**

The EGF-receptor pathway and Herceptin therapy (MP)
Weinberg Chapt. 4.3 (pp. 110-111), Chapt 5.3-5.6 (138-153), Chapt. 16.1-16.5 (797-824), 16.13 (pp. 844-850)

**Thursday February 2**

The EGF-receptor pathway and Herceptin therapy (continued)

**Tuesday February 7**

EXAM 1

**Thursday February 9**

Cell Cycle I: Concepts of control

**Tuesday February 14**

Cell Cycle II: Cyclin/Cdk regulation

**Thursday February 16**

Course exercise on the cell cycle
Tuesday February 21
Tumor Suppressors
Weinberg Chapter 7.1-7.7, pages 231-249.

Thursday February 23
Retinoblastoma: mechanism of action
Weinberg Chapter 8.5-8.13, pages 294-329.

Tuesday February 28
p53 and Cell Cycle Checkpoints
Weinberg Chapter 9.1-9.12, pages 331-361; Ch. 16.3-16.4 pages 813-818

Thursday March 2
Course exercise 3 on tumor suppressors

Tuesday March 7
Course Exercise 4

Thursday March 9
EXAM 2

March 10-19 Spring Break

Tuesday March 21
CLASS PRESENTATIONS 1

Thursday March 23
CLASS PRESENTATIONS 2

Tuesday March 28
Chromosomal rearrangements—abl and oncogenesis (MP)
Weinberg Chapt 4.6 9 (pp. 124-126), Chapt. 16.6-16.12 (pp. 822-844)

Thursday March 30
Abl and the dawn of personalized therapy (MP)
Tuesday April 4
CLASS PRESENTATIONS 3

Thursday April 6
Chromatin and Cancer
Weinberg Chapter 1.8, pages 21-24; Ch 10.1 sidebar, pages 402-403

Tuesday April 11
CLASS PRESENTATIONS 4

Thursday April 13
CLASS PRESENTATIONS 5

Tuesday April 18
Cancer Genomics I

Thursday April 20
Cancer Genomics II

Tuesday April 25
Course Exercise 5

Thursday April 27
GUEST LECTURE--Jim Evans, MD, PhD
Bryson Distinguished Professor of Genetics and Medicine

FINAL EXAM MONDAY MAY 8 Noon [We do not choose date or time!]