

BI392 – The Cell Cycle and Cancer – Spring 2010
Course Schedule and Readings

<u>Week of:</u>	TOPICS	READINGS
February 4:	- Introductory Comments Problems for discussion An introduction to tissue biology	No readings.
February 11	- An Introduction to cancer and the genetics of cancer A review of mitosis and its mechanics	1) Cavenee, Webster, and White, Raymond. 1995. The genetic basis of cancer. <i>Sci. Am. Mar95, Vol.272, Issue 3: 72-79.</i> 2) Rennie, John, and Rusting, Ridki. 1996. Making headway against cancer <i>Sci. Am. Sep96, Vol. 275, Issue 3: 56-59.</i> 3) Hanahan, Douglas, and Weinberg, Robert A. 2000. The hallmarks of cancer. <i>Cell 100: 57-70.</i>
February 18	- The cell cycle I – Introduction to the process and its control	1) Nurse, Paul. 2000. A long twentieth century of the cell cycle and beyond. <i>Cell 100: 71-78.</i> 2) Ford, Heide, and Pardee, Arthur. 1999. Cancer and the cell cycle. <i>J. Cell. Biochem. S32:166-172.</i> 3) Yamasaki, Lili, and Pagano, Michele. 2004. Cell cycle, proteolysis and cancer. <i>Current Opinion in Cell Biology 16: 623-628.</i>
February 25	- The cell cycle II – Molecular details	1) Mercer, W. Edward. 1998. Checking in on the cell cycle. <i>J. Cell. Biochem. (Suppl. 30/31): 50-54.</i> 2) Karlsson-Rosenthal, Christina, and Millar, Jonathan B.A. 2006. Cdc25:mechanisms of checkpoint inhibition and recovery. <i>Trends in Cell Biol. 16: 285-292.</i> 3) Grim, Jonathan E, and Clurman, Bruce E. 2003. Cycling without CDK2? <i>Trends in Cell Biol. 13: 396-399.</i>

Seminar Topic Ideas Due – Noon, February 26

March 4	-	The cell cycle III – Readings from the primary literature	<ol style="list-style-type: none"> 1) Clute, Paul, and Pines, Jonathon. 1999. Temporal and spatial control of cyclin B1 destruction in metaphase. <i>Nature Cell Biol. 1</i>: 82-87. 2) Acquaviva, Claire <i>et al.</i> 2004. The anaphase promoting complex/cyclosome is recruited to centromeres by the spindle assembly checkpoint. <i>Nature Cell Biol. 6</i>: 892-898. ***
		<p>In Class Essay: Cell Cycle Control</p> <p>Find readings to support or refute <i>Misconception</i> topics.</p>	
March 11	-	Signal transduction and cancer	<ol style="list-style-type: none"> 1) McCormick, Frank. 1999. Signalling networks that cause cancer. <i>Trends Cell Biol. 9</i>: M53-M56. 2) Repasky, Gretchen <i>et al.</i> 2004. Renewing the conspiracy theory debate: does Raf function alone to mediate Ras oncogenesis? <i>Trends in Cell Biol 14</i>: 639-647. 3) Doxsey, Stephen <i>et al.</i> 2005. Centrosome control of the cell cycle. <i>Trends in Cell Biol 15</i>: 303-311. ***
March 18	-	<p>EXAM – March 15 through March 17</p> <p>Discussion of <i>Misconceptions about the Causes of Cancer</i></p>	<p>Meet with Greenwood to discuss symposium progress by Friday</p> <p><i>Selected Readings from Misconceptions about the Causes of Cancer</i> ***</p>
March 25	-	<i>SPRING VACATION</i>	
April 1-		Cellular adhesion and metastasis	<ol style="list-style-type: none"> 1) Ruoslahti, Erkki. 1996. How cancer spreads. <i>Sci. Am. Sep96, Vol. 275, Issue 3</i>:72-77. 2) Chang, Chieh, and Zena Werb. 2001. The many faces of metalloproteases: cell growth, invasion, angiogenesis and metastasis. <i>Trends Cell Biol. 11</i>: S37-S43. 3) Bollen, Mathieu, Gerlich, Daniel W., and Lesage, Bart. 2009. Mitotic phosphatases: from entry guards to exit guides. <i>Trends in Cell Biol. 19</i>: 531-541. ***

Essay on the Human Impact of Cancer due by noon, Friday, April 2

- April 8 - Apoptosis
- 1) O’connor, Liam *et al.* 2001. Apoptosis and cell division. *Curr. Opinion Cell Biol.* 12: 257-263.
 - 2) Lewis, Jean McArthur *et al.* 2002. Integrins regulate the apoptotic response to DNA damage through modulation of p53. *PNAS* 99: 3627-3632.
 - 3) Wang, Weigang *et al.* 2005. Tumor cells caught in the act of invading: their strategy for enhanced cell motility. *Trends in Cell Biol.* 15: 138-145. ***

Hand in final symposium title, tentative outline, and preliminary reference list in class on April 8.

- April 15 - Angiogenesis
- 1) Folkman, Judah. 1996. Fighting cancer by attacking its blood supply. *Sci. Am. Sep96, Vol. 275, Issue 3:*150-154.
 - 2) Bråkenhielm, Ebba *et al.* 2004. Adiponectin-induced antiangiogenesis and antitumor activity involve caspase-mediated endothelial cell apoptosis. *PNAS* 101: 2476-2481.
 - 3) Zhao, Tongbiao, and Yang, Xu. 2010. p53 and stem cells: new developments and new concerns. *Trends in Cell Biol.* (article in press) doi:10.1016/j.tcb.2009.12.004. ***

April 22 - Symposium on Cancer

April 29 - **Exam – April 28 through May 3**
Symposium on Cancer

May 6 - Symposium on Cancer

*** Papers discussed in class with student discussion leaders