

Molecular Biology of the News (BIOC5240)

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Key Dates: Wednesdays, January 19 - April 20 from 5 p.m. – 6 pm
6 pm Apr. 20 – have Dr. Rogers approve your choice of essay topic.
Essay (Take Home Exam) due May 4

Location: MSB E609b – seats at the table are reserved for enrolled students.

Credits: 1

Goals: The objective of this course is to discuss fundamental biochemical principles underlying recent developments that have received attention in the lay press (e.g., New York Times, Time Magazine).

Grading basis:

A 2 page take-home essay.

Attendance is mandatory. Proof of legitimate absence (e.g. medical doctor's letters, hospital admission papers, or funeral notices) must be provided to Dr. Rogers.

Each unexcused absence will reduce the final grade by one letter grade.

Date	Lecturer	Title
January 19, 2011	Dr. Melissa Rogers	Stem Cells: Is Reprogramming the Solution?
January 26, 2011	Dr. Michael Mathews	HIV/AIDS: The beginning of the end?
February 2, 2011	Dr. Betsy Barnes	Genetic engineering of human babies – fact or science fiction?
February 9, 2011	Dr. Ray Birge	Cancer Vaccines
February 16, 2011	Dr. BJ Wagner	Resveritrol
February 23, 2011	NO CLASS	
March 2, 2011	Dr. Carol Lutz	Influenza
March 9, 2011	Dr. Sylvia Christakos	Vitamin D
March 16, 2011	Dr. Scott Wadsworth (Johnson & Johnson)	Repurposing Drugs
March 23, 2011	Dr. Robert Lahita	TBA
March 30, 2011	Dr. Neerja Kaushik-Basu	TBA
April 6, 2011	NO CLASS	
April 13, 2011	Dr. Chee Gun Lee	TBA
April 20, 2011	Dr. Carolyn Suzuki	TBA

Molecular Biology of the News Take Home Essay

Choose one lecture. Write a 2 page essay that delves more deeply into the topic of your chosen lecture. Your essay must include facts that were not provided in the lecture.

Due: *May 4, two weeks after the last lecture*

Indicate your choice of lecturer as early as possible. A maximum of three essays will be permitted per lecturer. Dr. Rogers must approve your choice by 6 pm on Apr. 20.

Format:

2 pages, typed, double-spaced, 12 point font, 1 inch margins – no exceptions. Figures and references are not included in the page limit. References should be in the style of the Journal Cell Biology (summarized below) and include the title of the article.

Check spelling and grammar. Grades will be marked down for carelessness.

Please note “Grading Rubric” and “Biochemistry and Molecular Biology Department Guidelines on Academic Integrity” (below).

Extra credit: Propose an experiment to address some aspect of your chosen topic (1 page only). Your page should include:

1. An opening statement of significance (why should anyone care to do your experiment?).
2. A statement of rationale (what is known that led to your hypothesis?)
2. A specific hypothesis (a proposed explanation for an observed phenomenon)
3. A brief description of an experiment to test your hypothesis. Only describe the procedure to the level typically found in textbooks. Provide references to the recipes and precise details.
3. An “If...., then....” statement that predicts the results of your experiment (If the hypothesis is true, then this result will be obtained)
4. A closing statement of significance (what is the implication of your hypothesized result?).

Example: Understanding stem cell differentiation is important, because stem cells may be used to alleviate heart damage following heart attacks. People that express high levels of factor X have a better prognosis after heart attack [REF]. I hypothesize that factor X promotes the differentiation of mesenchymal stem cells into cardiac myoblasts. I will grow stem cells as described in [REF]. Experimental cells will be treated with factor X dissolved in suitable carrier and control cells will be treated with carrier alone. After growth, cells will be visually assessed for the presence of beating heart cells. Cells also will be stained for cardiac actin, a marker of cardiac myoblast differentiation, using immuno-histochemical techniques [REF]. If factor X promotes the differentiation of mesenchymal stem cells into cardiac myoblasts, then I will observe beating cells and cardiac actin-positive cells in the factor X -treated plates, but not the control plates. If factor X proves to promote the differentiation of these stem cells into cardiac myoblasts, then it may prove useful in treating heart attacks.

Including a proposal cannot hurt your grade and may help!

Journal of Cell Biology Reference format: <http://jcb.rupress.org/site/misc/ifora.xhtml>

References should be cited parenthetically in the text by author and year of publication.

Examples of citation formats:

(Catalucci et al., 2009), (Pedersen and Tsai, 2009), (Wittman, 2009)

References should be listed alphabetically by first author's last name. Abbreviate the names of journals according to [PubMed](#).

Examples:

Journal Articles

Foster, E.R., and J.A. Downs. 2009. Methylation of H3K4 and K79 is not strictly dependent on H2B K123 acetylation. *J. Cell Biol.* 184:631–638.

Eastman, S.W., M. Yassaem, and P.D. Bieniasz. 2009. A role for ubiquitin ligase and Spartin/SPG20 in lipid droplet turnover. *J. Cell Biol.* 184: 909–921.

Online Peer-Reviewed Articles

Lopez-Soler, R.I., R.D. Moir, T.P. Spann, R. Stick, and R.D. Goldman. 2001. A role for nuclear lamins in nuclear envelope assembly. *J. Cell Biol.* doi:10.1083/jcb.200101025

Complete Books

Myant, N.B. 1981. *The Biology of Cholesterol and Related Steroids*. Heinemann Medical Books, London. 882 pp.

Articles in Books

Innerarity, T.L., D.Y. Hui, and R.W. Mahley. 1982. Hepatic apoprotein E (remnant) receptor. In *Lipoproteins and Coronary Atherosclerosis*. G. Nosedá, C. Fragiaco, R. Fumagalli, and R. Paoletti, editors. Elsevier/North Holland, Amsterdam. 173–181.

Essay grading rubric:

Total possible score: 20	Excellent (4 points)	Very Good (3)	Average (2)	Poor (1)	No credit (0)
Information extends lecture					
Overall understanding of topic					
Support from specific examples (data, figures, etc.)					
Organization					
Format, grammar, spelling					
Up to 3 points extra credit may be awarded for a research proposal: Grade = total score earned ÷ 5					

A (4), B+ (3.5), B (3), C+ (2.5), C (2), D (1), F (0)

Biochemistry and Molecular Biology Department Guidelines on Academic Integrity

Like all students of the UMDNJ - Graduate School of Biomedical Sciences (GSBS), students enrolled in Biochemistry courses are expected to adhere to the policies addressing academic integrity described in:

The GSBS Website and Handbook: (http://www.umdnj.edu/gsbweb/ac_integ.htm
http://www2.umdnj.edu/gsbweb/documents/pdf/Fall_06_Handbook.pdf),

The University Guidelines for Conduct of Research
(<http://www.umdnj.edu/acadweb/Guidelines.pdf>),

and at the UMDNJ Website on Policies
(<http://www.umdnj.edu/oppmweb/Policies/contents.html>).

The following text is a synopsis of these policies with particular emphasis on plagiarism.

From the Code of Professional Conduct: All students are expected to observe generally accepted principles of scholarly work, and to submit their own rather than another's work. **Students may not falsify** (state or write something you know to be untrue), **fabricate** (make up information with the intent to deceive) data, or **plagiarize** (to pass off the words or ideas of another as your own). Students must reference the published work of others appropriately. Students may not receive or give aid during examinations or other work requiring independent effort. When submitting written material, students explicitly imply that both the ideas and words used are their own. Cheating on exams, in any manner or form, will not be tolerated. Note also that individuals are responsible for reporting acts of academic dishonesty that are done by others.

Penalties: The GSBS Executive Council requires all instructors who encounter instances of student academic dishonesty to report them to the Dean of the GSBS. Penalties may include a zero grade on the individual assignment, failure of the course, or dismissal from the program.

Definition of plagiarism: the unauthorized use or close imitation of the language and thoughts of another author and the representation of them as one's own original work (from <http://en.wikipedia.org/wiki/Plagiarism>).

To see numerous examples, Google "examples of plagiarism" (~45,200 hits).

Tips for avoiding plagiarism:

1. Take hand-written notes from your sources. These notes should be brief bullet comments. Cartoons and lists are great. If your first language is not English, take notes in that language. Do not copy and paste text as a form of note-taking.
2. Use more than one source.
3. When you begin to write your text, put away all copies of your sources and work entirely from your notes.
4. Consider the goals of the assignment carefully. Plagiarized text and figures often stand out because they were composed by the other author for a different purpose and do not precisely address the needs of the current assignment.

This site has an excellent on-line tutorial that defines plagiarism, offers examples of different forms of plagiarism, and provides tips on avoiding plagiarism:

<http://www.cte.usf.edu/plagiarism/plag.html>.