

LS 5HA (4 units)
Biomedical Research: Concepts and Strategies

Instructors:

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Course Description:

In this class, you will be immersed in the world of biomedical research at UCLA. You will listen to two Faculty Research Seminars that will expose you to cutting-edge biomedical research conducted on campus. These seminars are one-hour lectures given by outstanding UCLA faculty on primary research projects from their own laboratories. They will introduce you to questions of general biological interest that are studied in UCLA research labs. This quarter we will focus on bacterial infections and neurotransmitter dysfunctions.

Each seminar will be followed by a series of classes in which we will explore the science behind the research. We will discuss scientific concepts and experimental approaches used in the talk. We will learn how to analyze a seminar in terms of its central questions, experimental data, conclusions of the speaker, significance of the work and possible future directions. We will also read and discuss papers from the primary literature with the same goals in mind. Finally, we will learn how to use the Internet to find published literature and scientific data that can enhance our research.

By the end of this class, you will have the confidence and intellectual tools to understand biomedical research!

Class Time and Location:

Lecture: Tuesdays and Thursdays, 2:00 – 3:15 PM
 Haines A2

Assignment and Grading:

Class participation is important! Your grade will depend in part on how much you speak up or ask questions in class. Remember, there is no such thing as a foolish question. If you don't understand something, it is more foolish not to ask a question! And some of the most simple or apparently naïve questions end up being the most provocative. So speak up!

There will be several short assignments or problem sets of 4-6 questions based on material covered in class. They will be used to monitor your understanding and to encourage you to think creatively about the science.

Your midterm assignment will consist of a short paper of about 3 pages, in which you will summarize the problem(s) studied by the seminar speaker, the experiments and their results, and the conclusions and significance of the work. You will also suggest one or two future directions that you might want to investigate if you were doing the research.

The final assignment will be a 3-5 page paper, the topic of which will be revealed later in the course.

Your final grade will be calculated as follows:

Class participation –	100
Problem sets (4) –	200
Midterm paper –	100
Final paper –	100
<i>Total –</i>	<i>500 points</i>

Course Evaluation:

Please go to the following website to fill out a pre-course survey. There will be another survey at the end of the course at the same site. The URL is:

<http://sci.grinnell.edu/surveys/prot/cure.htm>

The login name is “cureresp” and the password is “blue2white”.

TENTATIVE CLASS SCHEDULE

Week 1

Tuesday, Apr. 1 Handout syllabus. Course expectations, format & grading.
Introduction to the course.

Thursday, Apr. 3 Seminar #1: Dr. Beth Lazazzera. *Elucidating mechanisms
controlling biofilm formation by Bacillus subtilis.*

Week 2

Tuesday, Apr. 8 Seminar #1 → Deconstruction session 1
Problem set 1 due.

Thursday, Apr. 10 Seminar #1 → Deconstruction session 2

Week 3

Tuesday, Apr. 15 Seminar #1 → Deconstruction session 3

Thursday, Apr. 17 Seminar #1 → Deconstruction session 4

Week 4

Tuesday, Apr. 22 Seminar #1 → Deconstruction session 5
Problem set 2 due.

Thursday, Apr. 24 Seminar #1 → Deconstruction session 6

Week 5

Tuesday, Apr. 29 Seminar #1 → Deconstruction session 7

Thursday, May 1 Q & A with Dr. Beth Lazazzera

Week 6

Tuesday, May 6 Information on applying to the Biomedical Research Minor
Midterm paper due.

Thursday, May 8 Seminar #2: Dr. David Krantz. *The synaptic and behavioral
consequences of altered neurotransmitter release in Drosophila
melanogaster.*

Week 7

Tuesday, May 13 Seminar #2 → Deconstruction session 1
Problem set 3 due.

Thursday, May 15 Seminar #2 → Deconstruction session 2

Week 8

Tuesday, May 20 Seminar #2 → Deconstruction session 3

Thursday, May 22 Seminar #2 → Deconstruction session 4

Week 9

Tuesday, May 27 Seminar #2 → Deconstruction session 5
Problem set 4 due.

Thursday, May 29 Seminar #2 → Deconstruction session 6

Week 10

Tuesday, Jun. 3 Seminar #2 → Deconstruction session 7

Thursday, Jun. 5 Q & A with Dr. David Krantz

Week 11 (Finals Week)

Tuesday, Jun. 10 **Final paper due.**

Thursday, Jun 12