

2017 BC464/563 Molecular Genetics – Recitation

The syllabus described below is *in addition to* the “BC463/563” main lecture requirements.

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Meeting time/place: Wednesday at 4 PM Eddy 212

Student Learning Outcomes:

- Understand primary research literature in its scientific context
- Critically evaluate molecular biology experiments and their interpretation
- Engage in experimental design to answer questions about nature
- Communicate effectively with other scientists

Topics: To be announced

Preparing and leading discussion (2x30 pts)

Group Paper Outline: 10 pts

Preparation session prior to class: 10 pts

Quiz questions submitted: 10 pts

Students will be divided into groups of 6. Each group will work together to discuss seven research articles during the semester. Instructors will lead the first paper discussion, after which two discussion leaders from each group will cover one of the following six paper sessions. Each student will lead the discussion **twice** during the semester.

A week before the assigned discussion session, discussion leaders will have met and developed a Group Paper Outline, due by Wed at noon. They will then meet with the instructor/TA on Wed, 5-6 pm, for a preparation session. During the session, they will be evaluated on their comprehension of the paper. Afterwards, each discussion leader will submit 3 quiz questions (with answers indicated) on Canvas by Sunday at noon.

Discussion quizzes (70 pts)

Immediately following all seven paper discussions every student will take a short quiz (10-15 minutes). Class discussions will not cover the paper in-depth enough to perform well on the quizzes. You must read the paper and start analyzing it before you come to class. Every student is responsible for all seven quizzes (10 pts each).

Poster presentation (30 pts)

Poster outline: 3 pts

Powerpoint presentation: 10 pts

Team evaluation: 4 pts

Oral Presentation: 10 pts

Ranking current posters: 3 pts

In the same groups, 3 students will work together on a poster that will be presented towards the end of the semester. Each poster focuses on significant discoveries from a past Nobel prize winner (in Chemistry or Medicine). The topic should be relevant to Molecular Genetics in general and will be vetted during class on 10/26. In a poster format, each group is charged to present how the discovery was made, why it was Nobel-worthy, and what the remaining significant questions are. In your poster, you are encouraged to outline milestones in the course of discovery, use schematics to depict important concepts, and use original figures to illustrate important experiments. Make sure to cite your sources. Use the grading rubric to review the important elements of a poster. You will rank your peers posters after the presentations are complete.

Posters will be made in standard powerpoint slides. The electronic version is due on 11/1 before class for all groups. Each group is responsible to print the slides on standard letter-sized paper (in color) and pin them onto the wall for presentation purposes in two class periods. During class period in which students are not presenting they will provide written feedback for other posters. Quiz questions related to the posters may appear on the final exam.

Extra questions on exams (40 pts)

Grading: Traditional letter grades will be assigned. The individual class assignments will constitute the following proportion of your final grade:

600 potential points earned in the main lecture section
 200 potential recitation points
 800 total points

In general, grades will be assigned on the basis of total number of points using:

90-100% = A
 80-89% = B
 70-79% = C
 60-69% = D
 <60% = F

Important note: All written assignments (including exams) will be graded for spelling and grammar, as well as content and organization.

Sign-up sheet as a Discussion Leader (example)

Group 1: *You have to be available on both presentation and preparation dates.*

Presentation date	9/13	9/27	10/4	10/11	11/29	12/6
Preparation session date	9/6	9/20	9/27	10/4	11/27	11/29

DATE	RECITATION TOPIC
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W 8/23	Introduction (request for planned excused absence)
W 8/30	Paper session 1 example: <i>Camacho and Salas</i> Quiz 1 Assign groups/time for discussion leaders
W 9/6	In-class assignment
W 9/13	Paper session 2 Quiz 2
W 9/20	FIRST EXAM: no recitation
W 9/27	Paper session 3 Quiz 3
W 10/4	Paper session 4 Quiz 4
W 10/11	Paper sessions 5 Quiz 5
W 10/18	Second EXAM: no recitation. Poster outline due Sunday by noon.
W 10/25	Poster preliminary presentation
W 11/1	Poster Session I
W 11/8	Poster Session II
W 11/15	Third EXAM: no recitation
11/20-24	FALL BREAK
W 11/29	Paper session 6 Quiz 6
W 12/6	Paper session 7 Quiz 7

Due dates:

- Group Paper Outlines are due **Wed at noon** the week before your assigned discussion session.
- Discussion leaders are to meet with instructor/TA **Wed, 5-6 pm**, the week before your assigned discussion session. Exception: if you will lead discussion on 11/30, the meeting is changed to Monday, 11/28, 5-6 pm. Your due date for quiz questions remains the same.
- Each discussion leader will design 3 quiz questions and submit by **Sunday at noon**, before your assigned discussion session.

Group Paper Discussion - Instructions and Assessment

Groups: There will be 5 groups, each consists of 6 people. This team will work together to discuss papers and prepare posters throughout the semester. Two people from each group will cover each of the six research papers. You will be assigned to your group the second week of class.

Discussion Leader Responsibilities:

1. Preparation

The week before your presentation day, you need to **have a deep understanding** of the paper. 2 discussion leaders from each group will **co-develop** a discussion outline and submit on Canvas by Wed at noon. Use the template provided to create the outline and the example given for the first paper. You are responsible for getting background information on the methods and describing how the experiments using these methods are done; for understanding the context of the paper – how it fits into the current knowledge in the field, what people knew when this paper came out; and for delving into the discussion – what are the major conclusions and how do they relate to other findings in the field, how do they relate to life in general, what are the implications for these conclusions.

Please use these major headings in your outline:

Discussion Outline – Group X (your names: _____, _____)

A. Authors of paper:

Title of paper:

B. Main Problem/Question of the paper

C. Main Conclusion

D. Background

E. Importance/implications

F. Experimental Approaches

Method 1 Protocol

Method 1 Findings

Method 2 Protocol

Method 2 Findings

Method 3 Protocol

Method 3 Findings

G. Next Experiments

2. Preparation session with the instructor/TA

The week before your presentation day, you will meet with the instructor/TA on Wed, 5-6 pm, in Eddy 212. During this meeting, the instructor/TA will act as facilitators to ask questions and promote discussions. You should be prepared to answer content questions about the paper and engage in in-depth discussions. Your performance during this meeting will be graded by the instructor/TA.

3. Design quiz questions

Each discussion leader will generate 3 multiple choice questions on the material in the paper. Submit your questions with answers indicated on Canvas by Sunday at noon. These questions will be graded based on correctness and depth. Well-designed questions will be chosen to be used in class.

4. Lead your group discussion in class ~ 25 minutes

You will lead the discussion of your paper in your group. In this discussion, help the other students in your group understand the paper to the level you did when getting ready to explain it. Help them understand what the figures mean and why the authors drew the conclusions they did. Be prepared for them to ask you questions as they try to understand the paper better. Also, be prepared to ask them questions to gauge how well they understand the paper. Use your preparation session with the instructor/TA as an example.

Whole Class Responsibilities:

1. Read the paper each week. Use the “Guide to reading a journal article” to help you read the paper thoroughly! There will not be enough time in class to understand this paper enough to perform well on the quizzes. You need to read the paper and start analyzing it before you come to class.
2. Participate in the group discussions. Ask questions of the group leader and your peers.
3. At the end of the discussion time, everyone will take a quiz on the paper (10 -15 minutes).

BC464/563 Team Evaluation for Poster Preparation

This sheet should be filled out by each team member and turned in the **day** of your presentation.

Your Name _____

Title of the poster you presented _____

Names of presenters (including you):

1. _____

2. _____

3. _____

Complete the following privately, skip a category if your team did not use it. (Each row should add up to 100).

Divide 100% among all participants in each category	1	2	3	Total Effort
Overall participation in preparation and presentation				=100
Collecting information (looking up background information, working to understanding the experiments, etc.)				=100
Preparation of the final powerpoint				=100

How well did Student 1 fulfill their team responsibilities? (Rate 1-10 with 10 being exceptional. You may also make comments. This is confidential.)

How well did Student 2 fulfill their team responsibilities? (Rate 1-10 with 10 being exceptional. You may also make comments. This is confidential.)

How well did Student 3 fulfill their team responsibilities? (Rate 1-10 with 10 being exceptional. You may also make comments. This is confidential.)

Evaluation Rubric for Posters

Taken from the course outline	5 pts	4 pts	3 pts	2 pts	1 pt
<p>Content</p> <p>how the discovery was made, why it was Nobel-worthy, and what the remaining significant questions are</p>	<p>Material is novel and goes well beyond what was covered in class</p> <p>Content is accurate and all required information is presented in a logical order.</p> <p>Poster flows well and logically.</p>	<p>Material goes beyond what was covered in class</p> <p>Content is accurate but some required information is missing and/or not presented in a logical order, but is still generally easy to follow.</p> <p>Poster flows well.</p>	<p>Material adds to what was learned in class</p> <p>Content is accurate but some required information is missing and/or not presented in a logical order, making it difficult to follow.</p> <p>Poster flows adequately.</p>	<p>Material overlaps significantly with what was covered in class</p> <p>Content is questionable. Information is not presented in a logical order, making it difficult to follow.</p> <p>Poster is unorganized.</p>	<p>Material is redundant with what was covered in class</p> <p>Content is inaccurate. Information is not presented in a logical order, making it difficult to follow.</p> <p>Poster has no flow.</p>
<p>Graphics</p> <p>schematics to depict important concepts, original figures to illustrate important experiments</p>	<p>Images are appropriate.</p> <p>Layout is pleasing to the eye.</p>	<p>Images are appropriate.</p> <p>Layout is fine</p>	<p>Most images are appropriate</p> <p>Layout is cluttered.</p>	<p>Images are inappropriate or layout is messy.</p>	<p>No images</p>
<p>Resources</p> <p>Make sure to cite your sources</p>	<p>Literature is cited both in figures and at the end</p>	<p>Literature is usually cited in figures and is included at the end</p>	<p>Literature is cited at the end</p>	<p>Difficult to tell where information came from but references are listed</p>	<p>No references are listed</p>
<p>Mechanics</p>	<p>No spelling errors. No grammar errors. Text is in authors' own words.</p>	<p>Few spelling errors. Few grammar errors. Text is in authors' own words.</p>	<p>Some spelling errors. Some grammar errors. Text is in authors' own words.</p>	<p>Some spelling errors. Some grammar errors. Most of text is in authors' own words.</p>	<p>Many spelling and or grammar errors. Text is copied.</p>