# BIMM 194/BGGN 283 – Gene Regulation in Disease

## Fall 2022

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Office hour: TBD, in 3218 Bonner Hall.

#### Goal of the class:

The primary goal of the BIMM194 *Gene Regulation in Disease* class is to learn to read primary research papers and evaluate how experimental observations lead to scientific conclusions. The focus will be on the latest research into gene regulatory mechanisms that relate to human infectious and genetic disease.

#### Weekly schedule:

Each week will focus on one specific research paper as listed in the posted class schedule. The following is the weekly schedule:

**Tuesdays 6:00 PM: Pre-class quiz due.** All students will submit a pre-class quiz, which focuses on a single figure panel of the week's discussion paper (see instructions below). The quiz is to be uploaded on the Canvas class website <u>no later</u> than Tuesday 6:00 PM, the evening before class. Please carefully follow instructions below and use the uploaded pre-class quiz template for your quiz.

Wednesdays 10:30-11:50 AM: In-class paper discussion. During class time, the instructor will discuss the paper with the class with input from students. For each figure panel, a student that has written their quiz about that particular panel - and therefore studied it in detail - will be asked to help present the panel to the class. Willingness to participate counts towards the class participation grade (see grading below), but the presentation itself is not graded and the instructor will step in to help as much as needed; this is complex research and no student is expected to understand all details of figure panels.

Wednesdays 11:40-11:50 AM: In-class quiz. During the last 10 minutes of class, students will be given an in-class quiz on Canvas in which they identify which figure panel best supports specific conclusions from the paper.

Please <u>bring a laptop</u> to each class for the in-class quiz and for possible use during class. Also, for the in-class quiz, <u>have the discussion paper available</u>, either on your

laptop or in print. Please contact me to let me know if you are unable to routinely bring a laptop to this class in which case you can take the in-class quizzes on paper.

### Pre-class quiz instructions:

Please select <u>one</u> figure panel (e.g. Fig 2B, i.e. only <u>one</u> panel from <u>one</u> figure) that you consider the most critical figure panel for the paper and answer the following questions (note: papers generally have more than one critical figure panel, but choose only one):

- A) What is the scientific <u>question</u> addressed by the experiment? (Please answer in form of a question).
- B) What <u>experiment</u> was performed?
  (Provide sufficient detail such that a reader could look at the figure panel and read your text and be able to interpret the experiment without reading the paper).
- C) What are the <u>control(s)</u> in the experiment and for each, why is it important?
- D) What <u>answer</u> did the experiment provide to the scientific question (i.e. what was the experimental <u>outcome</u> and <u>conclusion</u>)?

Use no more than one page, font size <u>12</u>, <u>1-inch</u> margins, single-spaced lines.

You are welcome - and indeed encouraged - to discuss these quizzes with other students before the quizzes are due, but you need to write them in your <u>own</u> words and <u>not</u> use the words of any other person, any sentences from the paper, or have anyone else edit your wording (see academic integrity below).

This quiz serves as an opportunity for students to take a deep dive into a single experiment of each paper to understand how a scientific question can be addressed by an experiment.

#### In-class quiz instructions:

A quiz will be provided for the last 10 minutes of class. For each quiz, a list of 5 conclusions from the paper will be given, and each student will select the figure <u>panel</u> (e.g. Fig. 2B, i.e. only <u>one</u> panel from <u>one</u> figure) that best supports this conclusion. Sometimes more than one panel could apply, but select only one. No written explanation is needed for your selection and the answer will never include a supplemental figure.

This quiz serves to reward those students who have carefully read each paper and followed along during class discussion.

#### Scoring of pre- and in-class quizzes:

Pre-class quizzes are scored on a 0-10 scale based on how important the chosen figure panel is to the paper, and your complete and accurate answer to questions A-D. Handing in late quizzes and/or not meeting format requirements (i.e. page limit, font size, margins) will cause a reduction in the score or a score of 0 depending on the severity.

In-class quizzes are scored on a 0-5 scale based on the correct identification of the most important figure panels for the listed conclusions. Partial credit will be given for partially correct answers.

#### BGGN 283 students only: Final exam.

For those of you taking this class for graduate student credit (i.e. BGGN 283 students), a 2-page final project write-up is due on **Tuesday Dec 6, 6 PM**, during finals week. Please see specifics in the BGGN 283 Final Write-Up Guideline document available on Canvas.

#### Grading:

- 60% Pre-class quizzes. Your 6 highest scored pre-class quizzes (of 8 total).
- 40% In-class quizzes and attendance. 30% from your 6 highest scored in-class quizzes (of 8 total) and 10% for attendance, as measured by having taken at least 6 of the 8 in-class quizzes and willingness to participate in paper discussions.

(Note: attendance makes up part of the grade in this class because the majority of learning happens during in-class discussions of papers).

For BIMM 194 students: The grade components listed above will make up 100% of your overall grade.

For BGGN 283 students: The grade components listed above will make up 80% of your overall grade. The Final exam write-up will make up the remaining 20%.

Letter grades are assigned as follows:

A+:	97-100%
A:	91-97%
A-:	90-91%
B+:	87-89%
B:	81-87%
B-:	80-81%
C+:	77-79%
C:	71-77%
C-:	70-71%
D:	60-69%
F:	Below 60%

A note on grading: Your own grade is <u>not</u> influenced in any way by how your classmates perform. Working together with your classmates will only help everyone involved. Studying in groups is highly recommended!

#### **COVID-19 and other accommodations**

As of this time, this class is scheduled to be in person with <u>masks</u> for the duration of the class and with <u>no eating or drinking allowed</u> as stipulated by current UCSD regulations. Please make sure to follow these guidelines, which could change during the quarter as dictated by developing UCSD policy. Any student breaking COVID-19 requirements during class will be asked to leave the classroom and lose credit for participation of that class. I also strongly encourage the wearing of masks in gatherings before or after class as this could be a source of spreading events.

In case of COVID exposure or symptoms, make sure to follow UCSD campus guidelines regarding quarantine from campus (<u>https://returntolearn.ucsd.edu/campus-guidelines/testing-and-screening/student-screening-and-testing/index.html</u>) and contact me prior to class start so I can help with accommodations.

Since the majority of learning in this class happens during in-class discussion of papers, for any class that you cannot attend for reasons other than symptoms that prevent you from entering campus, you will be unable to receive participation points or take the inclass quiz; however, it is important to bear in mind that you can miss two in-class quizzes and still receive a maximum quiz score. Should you develop a health emergency that makes it impossible to attend multiple classes in person, please contact me as soon as possible with documentation for possible accommodation.

#### Academic integrity:

All suspicions of academic misconduct will be reported to the Academic Integrity Office according to university policy.

For <u>this class</u>, the primary behaviors to avoid is to: 1) <u>Never</u> use any wording other than your own for pre-class quizzes (i.e. no wording from other students or directly from the papers), 2) <u>never</u> copy answers to in-class quizzes from other students, and 3) <u>never</u> attempt to get credit for attendance if you did not actually attend class. As listed above, discussing pre-class quizzes with peers prior to submission is perfectly fine and indeed encouraged as it helps learning, the key goal of the class.

Any students found to have committed academic misconduct will face administrative sanctions imposed by their college Dean of Student Affairs and academic sanctions imposed by the class instructor. The standard administrative sanctions include: the creation of a disciplinary record (which will be checked by graduate and professional schools); disciplinary probation; and attendance at an Academic Integrity Seminar (at a cost). Students can also face suspension and dismissal from the University; those sanctions are not at the instructor's discretion. Academic sanctions can range from a score of zero on a quiz to an F in the class. The appropriate sanctions are determined by the egregiousness of the Policy violation. Students who assist in or are complicit with cheating are also in violation of the Policy. Thus, students who become aware of their

peers either facilitating academic misconduct or committing it should report their suspicions to the instructor for investigation.

Please review UCSD's Policy on Academic Integrity, which can be found on this website: <u>https://students.ucsd.edu/academics/academic-integrity/</u>

## **Disabilities:**

If you qualify for accommodations because of a disability, please submit an AFA letter from the Office for Students with Disabilities (OSD) to the instructor as soon as possible, and no later than the second week of class, so that your needs may be addressed. The OSD determines accommodations based on documented disabilities. Please see guidelines at: <u>http://disabilities.ucsd.edu/</u>

Hope you enjoy the class! You will explore the exciting frontiers of research into gene expression in human disease and become an expert reader of scientific papers!