Name:

Submit electronically onto using the 'Assignment Upload' option on BB by Friday, Dec 9 at 5 pm EST, with filename <YourName>_SelfEval3.docx (make sure it's a word document!). Put your name at the top in the header as well.

The purpose of this final self-evaluation is (1) to examine what you have learned in BIOL199 Big Data in Biology throughout this semester both content- and skill-wise and (2) to provide a final opportunity for you to share with me your learnings, with a particular emphasis on displaying mastery of learning objectives from the course. There is also an opportunity to reflect on your learning habits, and note what will help you learn more effectively in future classes.

Completion of this self-evaluation is required to pass this course. The meaning of completion is a thoughtful response to each question that is not optional. That is, it should be a response that highlights concrete examples/language demonstrating the tie-in to the course (beyond what a person could write having just read the course description). **Making connections to course learnings/vocabulary and accurate explanations of concepts and skills in your responses will contribute to the specific grade I assign within your letter grade range.** Note that self-evaluations are individual work and the content should not be discussed with your classmates.

To complete the self-evaluation efficiently, I encourage gathering all your materials related to the course (e.g. Perusall readings and discussions, returned assignments on Box or hard copies with comments, returned CQs, notes and handouts from class, Blackboard page) in one place, so they are easily accessible for review and reflection. Ideally, the self-evaluation will be done AFTER you have completed the remaining course revisions, so you have all the course feedback on Box or as a hard copy *except* for the CQs taken during finals week.

Questions 1-3 relate to examining course objectives and previous self-evaluations.

1. Return to Self-Eval #2 and read over the learning objectives (LOs) you discussed in #3. For at least two LOs with which you were either NOT comfortable or did not sufficiently display mastery based on my comments, note them below and demonstrate your mastery.
   (Make sure to copy the LOs into the space below, and to be specific in your answer with examples, definitions, or thought processes that would show your comfort with the material. Feel free to reference course or lab work, readings, and/or assignments.)

Learning Objective:

Learning Objective:

2. Pick TWO learning objectives (LO) you did not address in Self-Eval #2. Note the LOs below, and demonstrate your mastery.
   (Make sure to copy the LO into the space below, and to be specific in your answer with examples, definitions, or thought processes that would show your comfort with the material. Feel free to reference course or lab work, readings, and/or assignments.)

Learning Objective:

Learning Objective:

3. In both previous Self-Evals, I asked you to examine what this sentence means to you: "75% of the genes responsible for human genetic diseases can be studied in fruit flies." We will do so one last time. What learnings in our course do you think relate to this sentence? What would you tell a friend about with regards to this statement, if they did not have any of your background in biology, big data, and/or research methodology?
   (Feel free to copy a paragraph from an earlier Self-eval and start from there!)

Answer here:

Questions 4-6 relate to specific aspects of the course, particularly reflections, close readings, the CQs, and lab.

4. You submitted weekly reflections, all of which will be shared with you in your Box folder by Monday, Dec 5 in a file called 'Name_BDB_F22_Reflections.xlsx'. Take a moment to read through your reflections throughout the semester. In a paragraph, evaluate your reflections.
   (Some possible questions to consider: Did you successfully learn material you were confused about? What do you most want me to take away and consider as I revise this course? What types of activities helped you engage with and understand material? What parts of the course resonated the most with you? What other thoughts popped into your mind as you read over your reflections?)

Answer here:

5. You had Close Readings throughout the semester, where you posted comments/discussion posts to share your thoughts on the material with the class. Here, I ask you to look back through some of the class posts made by you and your classmates, and share your thoughts related to Prompt A and Prompt B.
   (**Make sure to indicate the Week and Name of each reading with which the post/comment is associated, and if appropriate, you're welcome to copy the post/comment below as well.** You can refer to how your comment (or someone else's) started a conversation on Perusall, was a point of discussion in class discussions, connected ideas across course material, and/or explained outside material that furthered understanding of the highlighted reading.)

Prompt A, 1-2 posts where YOU contributed to the class's engagement and understanding with readings:

Prompt B, 1-2 posts where a CLASSMATE'S post contributed to the class's engagement and understanding with readings:

6. Speak briefly to the computational labs we did throughout the semester.
   a. A major goal of the BIOL199 series is for students to understand how discoveries are made using scientific reasoning and experimentation, and experience that process themselves, including how to communicate research findings. What tools, skills, mindsets, or logical processes that we learned in the lab did you find **most impactful** on your achievement of this goal?

Answer here:

   b. What aspects of the computational labs were **most difficult** for you? For these difficulties, what tools, resources, and aid from me or your classmates did you use to **help you succeed**?

Answer here:

Name:

7. For those of you planning to do CQ revisions, make a new document based on the following template. Submit this along with your final self-eval before 5 pm EST on Friday, Dec 9.

Note here whether you have submitted CQ revisions with SelfEval3:

Question 8 is our 'take-home exam' question. Your goal is to answer this question with your available knowledge, without reference to your notes, readings, or other resources. I will use this to help me gauge your understanding of foundational concepts and skills in the course.

8. As we have seen from the last few years and in our class, the evolution of new viral strains is a large challenge for human health. Consider that you go on to train further in biology. A new flu strain has arisen in one region of the world and seems to be spreading rapidly. As a skilled researcher in biology, you want to better understand how it is spreading globally, and how genetically and functionally different it is from other flu strains. Note that a viral genome is made of RNA, but there are techniques to convert the RNA to DNA for lab analysis. You have a strong foundation in evolutionary concepts and familiarity with big data, so *you decide to write up a research proposal addressing a potential question of interest*. In this research proposal of ~2-4 paragraphs, do the following:

a. Develop a research question, making sure to provide background to explain why your question is useful to study, and form a biological hypothesis addressing your research question.
b. Describe your methodology, making sure to clarify the organism(s) you might sample, the specific data you want to retrieve for comparison, and the types of lab and computational tools you might apply to obtain the samples and address your question. Make sure to justify *why* you chose each step by defining concepts, terms, or tools as appropriate.
c. While these do not have to be central to your research question, you must explain the central dogma and at least one evolutionary force somewhere within your proposal. Define relevant terminology where appropriate, assuming that the grant proposal evaluator does not know much about biology.

Answer here:

Name:

Questions 9-11 are where you examine the entire semester overall. You will use this to evaluate your own performance and provide some feedback to me to help me improve the course.

9. Consider the semester as a whole. If a friend asked you to describe the most **important** thing you learned in this course, what would you say?
Answer here:

10. Last but not least, this course uses an alternative grading structure, where the number of assignments completed to satisfaction is assumed to correlate with mastery of course concepts/skills. By now, you should be at or near completion of your final assignments/revisions. **Examine what you have completed this semester in this course and tell me what letter grade range you hope to achieve, making sure to clarify the work you have completed to satisfaction according to your specification checklist.** Optionally, if you are aiming for a letter grade above the minimum (i.e. C-, B-, A-), explain your justification based on work done beyond the minimum requirements and your perceived mastery of course material (e.g. based on my feedback or your ability to answer questions related to concepts/skills in the course such as those posed in this self-eval.
Answer here:

11. I have posted an OPTIONAL anonymous survey (A) with a few questions customized to my course, as I strongly believe that your experience of this course will help me improve my course design. If you have additional comments regarding the course that you'd like to make non-anonymous, please share below in (B).
A. Link to anonymous survey available here.
B. Share optional, non-anonymous feedback here:

Thanks for all the effort you put into learning this semester - I hope you gained a lot in your ability to ask scientific questions, connect biological concepts, communicate research, and study effectively. Please don't hesitate to keep in touch to let me know how you are doing. Enjoy a restful and festive Winter Break!
All the best, Dr. Yang