

1. Please comment on the individual instructors with regard to effectiveness and attitude toward students:**Strengths**

- Really liked the structure of the sections. Also liked the detailed lecture notes that were put online - so helpful.
- Loved Lipsick's sense of humor.
- Joe is an amazing lecturer. His lecture is very effective in helping students to understand a lot of cancer biology materials. He is very helpful toward students.
- Great enthusiasm for the subject and students, made material relatable.
- Joe is a great. He's a pretty funny lecturer and the material is definitely fascinating. He does a good job of bringing together a lot of the earlier topics in the later lectures. Cancer biology is by no means an easily understood topic with all of the ongoing research and wealth of information, but Joe does a great job of introducing you to the varied subject without overwhelming you. A really nice intro course.
- The professor really tried to engage with the students during lecture, through cultural references which made the class more fun
- The class was very interesting. He is very knowledgeable and inspires interest among his students.
- Extremely engaging style
- Fine.
- Great lecturer, readily available for consultation. Current organization of lectures (2 times a week for 1.5 hrs) is good, and better than proposed alternatives.
- Really enjoyed his sense of humor and little quotes and movie references peppered into lecture. Material was explained extremely well, and I liked the focus on experimental procedures.

Suggestions for Improvement

- Sometimes the lectures felt boring/monotonous.
- He can speak in a monotone at times which makes class a bit long and tedious.
- I would sometimes get bogged down in the genetic details and would like more comments on the big picture takeaways
- There was an attitude of apathy towards the students while outside the classroom, while I understand that it is my education and that it is my responsibility to decide to go to class and do well, it made me feel like I was just a number. This isn't a bad thing necessarily, as it gives you more freedom to catch up on material if you miss a class without feeling guilty, but I want to feel guilty, I want to feel bad that I will not be in class and that my professor will notice and be concerned.
- Maybe he could give more breaks in class. The material is very dense.
- Lectures can be disorganized
- Kind of nonchalant towards students, but I thought that was fine.
- He could engage us during lecture more. He could also encourage us to schedule office hours by at least suggesting some times when he is free.

2. Please comment on the strengths and weaknesses, if any, of the textbook(s) and reading(s). What materials were most and least valuable? Why?**Strengths**

- N/A
- Lecture slides were incredible.
- The readings help to supplement our understanding of the course materials by giving us real-life situation of how cancer is studied.
- Good coursework articles
- Dr. Lipsick definitely provides a wealth of resources for this course. His reading chapters for the first few lectures were very informative and interesting because he has a nice narrative style of writing. The Weinberg is also a pretty great resource although I didn't really tend to use it much except for on the exams.
- The textbook was enjoyable to read, it wasn't too dense, and it helped clarify material.
- The readings were very good in teaching the material. I gained a lot of practice in the useful skill of reading scientific papers.
- Loved the type of questions on the exams and the journal club style sections
- Did not read textbook.
- I loved the Weinberg text and wish there were more of an incentive to read it
- All papers were great and helped further understanding of the discipline.

Suggestions for Improvement

- N/A
- Did buy any of the textbooks. Not sure why they're even recommended. Maybe photocopy the important pages and give to class.
- None
- I think it would be more effective if the assigned book would have more of a focus on techniques that we use in class, as we often gloss over then to talk about disease, which are really interesting, but the techniques are important for exams and discussion and it would be nice to have a book that better does that. Hopefully there is one that isn't too dry.
- None
- Did not read textbook.
- It would be much better in my opinion to have shorter classes that are spread out in the week, so 60 minute slots three times a week. I felt that the lectures were way too long and I couldn't concentrate for an hour and a half.
- Did not use the book.

3. Please comment on assignments and exams (difficulty, length, frequency, usefulness, and their success at testing conceptual understanding rather than recall):

Strengths

- Well structured exams. Very good at consolidating all of the learning.
- I enjoyed analyzing a paper a week in depth. Really helped my scientific comprehension skills.
- The exam is fair in difficulty. It is a bit lengthy. The assignments require fair usage of time.
- Good at getting students to think practically like a scientist
- Take home exams test critical thinking which is great. Exams are completely fair, there's really nothing that's a curveball and plus internet use is allowed. It's really all about
- I liked the background information on the problems, it put the questions into a real world context and made them seem more important.
- The weekly readings were so useful. I think I gained such a essential skill in understanding scientific articles and journals. I think one reading a week is good too. The exams were also very useful. They encouraged critical and design thinking, something that is not too common in biology classes. Overall, every assignment was good.
- Assignments are adequately challenging
- Difficult, but did all of them without using the textbook.
- Section papers were well-chosen; great length, very relevant to class material, exposed to us to all sorts of techniques.
- Loved that the midterm/final were take-home and open-note, but still challenging and thought-provoking. I really felt like I was applying and critically thinking about the material, and learning to think "like a scientist" instead of having to memorize material and regurgitate it on a final that's too hard and is going to be curved anyway after making me feel like a failure. That's what I want to get out of my classes here.

Suggestions for Improvement

- Should make them shorter! The TAs, when asked about how long the exam would take, grossly underestimated the length of the exams.
- I thought filling out the reading templates was beyond absurd. I feel like either having a handout to go with each paper asking critical questions that will be discussed in section could be a lot better -- that way students at least attempt thinking about the harder questions before the TA explains it. The reading templates were stupid a lot because the questions didn't necessarily make you think. A handful of them were yes/no questions instead of "how" or "why." Occam's Razor: student's will write the most succinct possible.
- Could integrate experimental design more into the lectures and course, allowing for more design type questions on the exams. For instance, a lecture on how grad students, post docs, etc actually come up with their approaches and questions could be interesting and then you could incorporate all the databases and approaches to experimental design
- I really did not enjoy that the final was made harder because there was a need for a bigger distribution. I think I would have been okay with the test being harder because the professor thought that the material covered after the midterm was more difficult. For me it devalued the score I received on the midterm, which I was quite joyful for, as I also struggled with the midterm. I was happy that I worked so hard on the midterm and was able to get a decent grade. But by making the final harder, for a distribution purpose, it felt as if the professor was telling us that the midterm was not the real deal, it was kids play, and that the final was the real thing. It made me feel a little bad about my score on the midterm
- None.
- Take-home exams are too long, not big-picture enough.
- As someone less interested in the laboratory research sciences and more interested in clinical applications, I found the assignments largely to be based in methodology: understanding how scientists in the past planned their experiments, and how I could design my own in the future to ask different, new questions. While this

approach was likely useful for people hoping to go into lab work, I was bored by it and would have preferred a more balanced approach that discussed more of the human subjects research angles on these cancer-related topics. Perhaps this was not exactly the class for me, however, in which case my expectations would be unfair.

- 1 or 2 more practice midterms/finals would be nice.

4. Do you have any additional comments on the course over-all?

Strengths

- Great course overall.
- I thought there was too much content in the class. So I would prefer option (3) 60 minutes twice a week. If that's not possible, then option (1) is better than option (2).
- I think the current lecture and discussion section format works really well.
- Sections were great. I didn't have an evaluation to fill out on Axxess for my section, but my section leader, Ian was great. He was very prepared and was very knowledgeable about the various techniques and procedures. He always gave enough background and asked questions to stimulate experimental thinking.
- I enjoyed having class at 10am, I think it's a good time for this type of material. I also enjoyed only having it two times a week.
- I think this class was amazing. I enjoyed it very much. The exams, though time consuming, made me feel like I had practical applications of my knowledge. I enjoyed this quarter very much.
- Good.
- Professor is extremely knowledgeable. Course material is interesting and well organized. Discussion section papers are generally quite good.
- Lectures 90 minutes twice a week or 60 minutes three times a week are both fine. Don't take material out of the course!
- Re: lecture options — I would prefer 60 minutes, three times a week.
- I loved that each section was dedicated to a paper. Katie was a great TA! I know that there might have been some people who thought she covered the papers too slowly, but I thought she was just being very thorough and I walked out of section feeling like I really understood the paper that week. (I also switched into one of Jing's sections once and she wasn't as great -- not very clear, and not as thorough as Katie was).
- Papers selected for section were very good. midterm and final were very fair tests and I felt like I learned a lot from them
- One of my favorite courses. Helped me think analytically and have a strong grasp on basic science protocols.
- Definitely one of my favorite classes so far. I want to be a geneticist, so I wanted this class to be about the genetic basis of cancer, and that's exactly what I got. Not only was the material useful and relevant to my interests, it was enjoyable. I liked having two 90-minute lectures per week on Tues/Thurs, fits into schedules of sciency-people really well I think since Chem and Physics are usually Mon/Wed/Fri. But I wouldn't make lectures shorter because I would hate for any material to get cut out. Section probably only needs to be an hour/hour-fifteen thought... Thanks for a great quarter! Also Ian Winters is the best TA on the face of the earth.
- I liked the 5 minute breaks during lecture.

Suggestions for Improvement

- Thanks, Joe!
- Overall it seemed like the course was very centered on cancer genetics, which was great considering that this was the expertise of the TAs and instructor, however I really enjoyed the lectures on Cancer Epidemiology, and other factors governing the biology of cancer, such as environmental influences, patterns of human behavior. I would appreciate more balance between the in depth genetic details and the larger biological and epidemiological approaches
- In terms of section, I feel that it would have been helpful to recap the most important topics of lecture during section. While the papers are related to aspects of lecture, it would have been great to just discuss lecture topics as a whole in a smaller group setting.
- That being said, I did think they were too long and a lot of material was being delivered. I would much rather have three 60min classes three times a week, I think it would help me be more focused in class.
- I like Tues/Thurs lecture.
- I think the current arrangement of 2 lectures a week at the current length of 1.5hrs is the best
- Professor seems a little aloof. Exams are too ambitious.
- Since we were never tested on the content presented in class (or had problem sets related directly to the content), it was difficult to gauge how I needed to approach this content -- ie whether I needed to spend the time to learn the different pathways and proteins involved. Thus, in terms of content takeaways -- I'm not sure that there was a lot of solid content that will really stick around in my head -- rather, it was much more the research process and learning how to read scientific papers that I've taken away from the course. I guess what I'm saying is -- it might be a good idea to clarify up front how students should approach the content covered in lecture, since it doesn't come up really anywhere else (aside from some brief connections to the papers we read). I thought that the class structure (timing) was fine, and the breaks were much needed!
- Perhaps tailor down the amount of content covered in lectures. I understand that there's a lot of concepts to

cover in relation to cancer biology, but sometimes I felt a bit overwhelmed during lecture about all the information coming at me.

- I would prefer three 60 minute sessions over the week for all the information given.
- I prefer the lecture format to be 60 minutes, twice a week (but covering less material for the quarter). The lectures may have been a little too long, as after 60 minutes it was hard for me to pay attention.
- There is too much material covered in any one lecture. If less was taught, I feel like maybe I would have retained more from lecture.