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

Strengths

- Great lecturer, funny, engaging, never change
- knew the content very well
- Prof. Lipsick makes time to support his students academically, and also takes the effort to meet us outside of class for events like faculty dinners. He is clearly very knowledgeable about the material and enjoys teaching.
- great lecture material
- Engaging lecturer, chose interesting topics, knew his material, showed interest in students' learning
- good
- I really enjoyed this class. Prof. Lipsick did a great job of providing interesting and relevant "backstories" about the topics we discussed incorporating some current events relevant to lecture material. This is the first bio class I've taken that has really gotten me interested in learning more about medicine from a health policy perspective. Prof. Lipsick was also always open to meeting outside of class time to go over lecture topics, and I found this really helpful.
- Professor Lipsick clearly demonstrated his mastery of and investment of the material he teaches in this class. I left the class more interested in cancer biology than I had been coming into it. I also appreciate his efforts to infuse some culture into his lectures (although I don't know how meaningful that compliment is once you consider how culturally detached I am personally).
- Professor Lipsick seemed to care a lot whether or not we were learning the material, and was always available to answer questions. He also brought a sense of humor that made lectures all the more enjoyable
- Explains really well and teaches material worth knowing; a very interesting Biology class in that you learn about all of these techniques in the context of one of the really exciting fields of Biology and Medicine. The course is really nicely organized too so it you don't really feel lost in the big picture of it all.
- Very approachable instructor - felt comfortable asking for help at any time. Explained concepts clearly and was good at soliciting questions in class (though we did not often have questions). Was very helpful during office hours! Also appreciated the references to movies to help us remember certain topics.
- Always answered questions before, after, and during class. Made students feel comfortable asking them.
- Professor Lipsick was excellent. His lectures were full of historical facts that tied in to the lecture topic quite well and emphasized learning of the scientific process, instead of presentation of facts to be memorized.
- Dr. Lipsick taught this course amazingly. I learned so much, and I felt that he was able to answer all my questions in great detail. He was a really great professor.
- Injected some fun stuff into lectures. Very approachable.

Suggestions for Improvement

- sometimes talked too fast or went through the slides too quickly
- too many slides per lecture, i felt that the professor was trying to rush through too many slides every lecture
- none
- Professor Lipsick tends to move rather quickly through his lectures, particularly when discussing a new technique or a complicated new theory/pathway (not so much when presenting results). It might help to be more aware of this.
- Sometimes lecture can go a little too fast, particularly when looking at results of experiments.
- Don't know if this is changeable, but 1.5 hours is a bit long. It can be hard to stay alert during the last 1/2 hr.
- -
- Pace of the lectures made it difficult to follow the material. Perhaps some of the less important material could be removed and the extra time could be dedicated to more thoroughly explaining the big concepts.
- His lectures were a little too fast. It would have been perfect had we known the material beforehand, but we just blazed through it all at a pace where it was really hard to take in the material. The parts that I understood the best were the ones where I had done two or more years of research on them (but that was only one lecture). Everything else was a bit of a struggle. Perhaps he could cover less material, go a little slower, and try to use fewer examples (but ones that are explained in more detail and not rushed through) in the future.

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

- papers were well-integrated with the course content
- Readings were solid and good introductory cancer bio papers
- Weekly section papers were interested and integrated well into lecture.
- good
- Most valuable were the blurbs below the slides in the lecture ppt documents - if I missed something in class the explanations in these blurbs would usually clear up my confusion.
- Professor Lipsick did a fantastic job of putting together lecture slides and compiling an extensive list of relevant background readings for each subject we covered. The papers selected for discussion section were all very relevant and helped solidify our understanding of the key concepts presented in lecture.
- The chosen papers were very interesting and tied in well with lectures for that week
- Weekly reading were really nice and I got much more comfortable with reading papers by the end. Textbook readings were good but I really preferred the professor's own chapters since they were almost like lecture notes and were a good supplement to lecture.
- The ppt slides were very helpful and the experimental toolkit was a great tool for exams.
- -
  - The content of unpublished book closely resembled the lecture material. Since the lecture notes were usually very concise and thus weren't too descriptive, the unpublished book was an excellent resource to clear up any doubts I had about lecture material.
- Papers were helpful in understanding the course content.
- Textbook was superb. Weinberg is a genius. Papers were also excellent.
- Papers went well with lecture

Suggestions for Improvement

- the textbook should be recommended, not required. i bought it but still haven't opened it.
- none
- I found the questions posed in these ppt slide blurbs to be very helpful in solidifying my understanding of the material. More often than not, however, I didn't know how to answer these questions and it would be helpful if some hints to these questions were included in the blurbs.
- The volume of recommended - and even "required" - reading was a bit overwhelming at times. I doubt anybody had the time to go through it all. (I personally stopped trying by Week 2.) I did not purchase the textbook, so I can not comment on its quality - I will say that it is not required to do well in or even to understand the class, though.
- I didn't use the textbook at all?
- Sometimes the textbook readings can go beyond lecture and be little confusing.
- -
  - Post all the chapters of the unpublished book.
  - Did not use the chapter readings.
  - Lotta readings--can't do them all, not always clear what's most important.

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

Strengths

- exams were mostly fair.
- Very fair exams
- Exams difficult but fair, definitely tested conceptual understanding.
- good
- I found the exams very challenging. It was helpful that practice exams were posted online - perhaps having more than one practice midterm and final posted would be beneficial. The review sessions were helpful.
- Exams were reasonable in length and difficulty, and they did a good job of covering all of the topics and methods encountered in the class.
- The exams were of the appropriate difficulty and really tested our knowledge of the material and our critical thinking skills
- Reasonable workload, fair exams
- Exams were very difficult, but worth it b/c they got us thinking critically instead of regurgitating information.
- They were definitely successful at testing conceptual understanding rather than recall.
- Exams were fair in that they tested an understanding of the scientific process with regards to molecular oncology research.
- Didn't take too long, felt like they were fairly good at testing my overall understanding.
Exams were fun! And I liked how they emphasized conceptual understanding.

Suggestions for Improvement

- The word choice counts were too stringent. I cut out information to stay within the word counts and then got docked for not including information. Also, the curve is very steep. I felt the timing of when the final was given was unfair to students who had Monday or Tuesday finals and more time should have been allowed to account for this. Last, section leaders could provide feedback about how students are doing in section midway because I felt pretty in the dark about how I was doing compared to other students; it seemed everyone showed up and participated adequately so I don't know how we were being graded.
- I would have liked having some assignments between the exams to have more of an opportunity to improve taking the sort of exams given in this class. It was a little frustrating that no questions were answered about the exams during the periods in which they were being taken. Some of the language in the questions was very vague (ex: give a biological rationale of ...) and it would have been helpful to get clarification as to what exactly these types of questions were looking for (because the answer key was likely looking for something very, very specific). Also, it was frustrating that the midterm was graded with what seemed to be a very stringent rubric. On a few occasions I felt I clearly demonstrated my understanding of the tested concept but was docked points just because I left out a specific word.
- I'm not sure I understand the reasoning behind not giving us a weekend to work on the midterm (or giving us only three days, for that matter). Also, the word limits on the questions were incredibly torturous and pretty contrived. If there is going to be a word limit, I recommend deciding what you think the word limit should be, then adding 20%. It's much easier to design an answer that fits the word limit when you know exactly what the answer should be. For us students, not so much.
- I thought the word limit was too short for some of the questions on both the midterm and the final, and the time given (especially for the midterm, which we had to work on in the middle of the week) was a little too tight. It would also have been nice to know the due date for the final more in advance, as opposed to a week and a half before finals week.
- I would appreciate being able to ask clarification questions about the exam.
- As a suggestion for preparing the students for the exams more, I would wish we had two sections for this class: one with reading papers, and one with reviewing the material. There was a lot of material presented during every lecture, so I would have appreciated a section that would go through the important material where the TA would help us navigate the techniques and information.
- At times, the questions required independent research of techniques not thoroughly covered in lecture. The questions should perhaps be related to techniques with which the students are familiar.
- Word count was a little low for some things, I felt I couldn't explain myself properly.
- The exams were really long. The midterm took me 10-11 hours to complete and the grading was somewhat arbitrary. Sometimes points were taken off with no real explanation. Also, the whole word limit thing was distracting because I spent more time counting words than I did trying to answer the actual question.
- Don't think you should make section 40% of the grade for a few reasons. 1. Section is subjective. TAs are probably going to give better grades to more charismatic students. 2. Some students don't like to talk. There was this very quiet kid in my section one time who clearly knew way, way, way more than some idiots who talked a lot. 3. A bunch of premeds who all have to get excellent grades trying to have a pleasant, productive conversation that they know is a huge part of their grade? Not a fun atmosphere. Too competitive.
- The word limit is very difficult to do and takes a lot of time.

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

Strengths

- Overall, the course made me become more interested in the topic of cancer biology and I enjoyed the content.
- I'm glad I took this class and this class has helped me grow academically and think more critically as a scientist.
- A rigorous, fast-paced, and challenging class, but very educational and very interesting.
- I wanted to use this space to comment on discussion section, since I wasn't given the opportunity to submit a separate evaluation for it. My TA was Erin, and I can say without hesitation that her discussion section was the most enjoyable one I've been a part of at Stanford. She did a fantastic job of guiding us through the papers, coming well-prepared to make sure everybody was up to speed as far as background goes, and encouraging us to think critically about the experiments and results involved in each paper. She was also very responsive to mid-quarter feedback, which helped subsequent sections run quite a bit more smoothly. And finally, she was just a pleasure to be around and to have as a section leader.
- I really liked the material and the course's focus on current research topics and techniques. Overall I really enjoyed the class and the instructors were very helpful.
- Really great course; this was my first upper-level Biology course and I really liked that we learned a lot but still
went at an appropriate pace for those who didn't have experience with research techniques.

- Excellent course! I learned a lot about cancer and the path by which we got to our current understanding of cancer. I appreciated the focus on experimental approaches, the ways we were mistaken in the past, and the emphasis on critical thinking. Definitely one of the most worthwhile classes I've taken at Stanford.
- Made me think about cancer in a totally different way. I now realize that there really can't be just one big cure for cancer, but there has to be lots of research done to find ways of fixing mutations. Also, as a society, we blame cancer for a lot of things, but cancer is just inside of us, it's our own body's fault for creating it...
- n/a
- Loved learning the material! Very interesting and well-taught.
- Great class. Would highly recommend it. Learned a huge amount.
- Interesting course material
- Professor Lipsick is a great guy and an awesome human being. I loved all of his references to movies and all his quotes. He was very helpful and understanding about everything and extremely approachable. He makes the class good. I enjoyed it because of him.
- One of the best classes I have taken at Stanford!
- This has been one of my favorite classes. Professor Lipsick is an excellent professor and I recommend this class to anyone interested in biology or cancer biology who I meet. His lecture style (and humor) was greatly appreciated, and the quality of this class was excellent.
- Erin was a phenomenal TA

Suggestions for Improvement

- none
- One word of advice I might pass along to Erin is that if you are going to pick on people to answer specific questions or describe specific figures, ask the question BEFORE calling the name of the person. This forces everyone to think through the question and also puts less pressure on the person you finally call on.
- More breaks during lecture. I don't know if this is just me, but maybe 2 or 3 breaks during class would improve concentration?
- n/a
- Try to create stronger links between the exams and the lectures. At times, I felt like I was just looking for key words to fill in and not actually understanding the material simply because there was an overwhelming amount of it (80 slides per lecture was a bit much to catch up on once you fell behind).
- Lotta details, lectures can be somewhat difficult to follow--this combined with the fact that we're not tested on the details makes it hard to pay attention at times.
- Very hard to study for the class. And too much material in each lecture. Terrible grading system: I wish we had problem sets or something that helps take the load off the difficult exams. It was also terrifying to know that 40 percent of the grade was section participation.
- The section does not cover lecture material, so TA handouts covering the lecture material would be helpful. If not, then a composition of all the techniques learned with the questions the technique can answer, simplified protocol, necessary controls, and presentation of results would be helpful. The slides do compile all the techniques. However, it is mostly pictures with minimal words. Most of this information had to be gathered elsewhere.