

Lit Review Basic Ideas

- The idea of the Lit Review class is to learn to think critically about how molecular and cellular biology is approached and analyzed. That is, to think about what experiments mean, how to interpret ideas, and what levels of evidence are needed to make conclusions.
- You need to figure out why they did the study—what was the problem that they were trying to solve?
- **What was the hypothesis the authors had starting out?** Sometimes this is not obvious, but it will help you immensely to try figure this out to understand the logic of the approach.
- How did they do it—what are the techniques? This may be quite specialized and you may not understand all of it. Hopefully, there will be others in the class who can contribute more to the methods analysis depending on the paper and the area. This class is more about ideas than methods, so don't worry so much about exactly how each experiment is done.
- How are the results interpreted? Are there other interpretations (often the authors will bring this up themselves)? What evidence is needed to distinguish between these interpretations?
- What does it mean? What is the logical extension of these results?
- Most cutting edge research is not correct in its entirety. Papers that are completely correct are usually boring ones that are confirmatory of something that is already known. An important paper contains a central experiment with novel data or data that contains a new idea. Everything else in the paper is built on the central experiment. However, the interpretation and extension of the central idea is often where your discussion of the ideas is more important.

How this works

- For the first four weeks, you have been randomly assigned to Groups 1, 2, or 3. Check the website (<http://libguides.fhcrc.org/MCBLitReview>) for the room schedule for your group each week since they change around.

- A different faculty member has picked a paper for each section for each week. You need to read this paper carefully. They will be difficult. Expect to spend several hours on it.
- The faculty have also assigned several questions that you should use to guide your reading, i.e. this is what you want to look for. You should write about half a page to one page total (typed) about the questions. If you cannot answer the questions (possible if its far from your field) then do your best and explain what you can figure out about it. Obviously, you should understand it better after the discussion.
- The written part is to make sure that you read the paper. I don't really care that much if it is accurate or not—I am just looking at it to assess that you are read the papers. Your answers will be collected at the end of the session (i.e. you need to have them printed out by the time class starts). **Be sure to put your name on it.**
- Aside from that, come up with some questions that you have about the paper. Don't focus on technical items. Looks for questions of interpretation that relate to the central experiments. Be ready to talk! It's a very long quarter if you aren't an active participant.

Student-led sessions

- Starting in February until the end of May, you will pick the papers and lead the discussion rather than faculty. You will be meeting as one group. The rooms change each week, so be sure to check the schedule on the class website.
- You have been assigned partners. With your partners, you need to pick a paper that the class will discuss on the date assigned to you.
- Pick a good paper with something to discuss in it. Get ideas for papers with from faculty members—someone you rotated with last quarter, the person you are rotating with this quarter, someone with expertise in a paper that looks interesting.
- You are welcome to invite the faculty person who helped you to attend the class and lend extra expertise. I will be there, but I will probably not know much about the subject.
- Look for papers in general interest journals such as Nature, Science, PLoS Biology, PNAS, Cell for example. Other journals are good for

different areas (PLoS Pathogens, PLoS Genetics, Nature sisters, Cell sisters, etc.). Avoid a specialist journal since if it is in a more general interest journal, then it will be more likely to be written for a broader audience and will be easier to everyone else to delve into it. Papers that use a variety of approaches are also nice.

Dates to keep in mind:

- Start thinking about a paper at least 4 weeks before the session you will lead. Ask me if you want to know if a paper is appropriate or not. I will be glad to give you advice. I rarely veto your choice, but I will tell you if I think something is a good or bad idea.

- Two weeks before your date, email me the citation of the paper your group has chosen

- At least one week before your date, email me one to three questions about the paper that you want the class to think about when reading.

- I will post the citation and questions on the website. Class should check the website weekly.

- You and your partners will lead the discussion. Have questions ready to discuss. Know the background. The class is still responsible for reading the papers carefully as well, and having questions ready. You can format it however you want, but I will be posting hints for you on the website of what I think works well. I will give you feedback afterwards.

- Questions about how this works? Let me know.