Purpose and Philosophy

- The main purpose of the Lit Review Class is to learn to think critically about how molecular and cellular biology is approached and analyzed. That is, you will learn to think about how a hypothesis is generated, how a hypothesis is tested, how to interpret experimental results, and how to approach new scientific questions.

- A second purpose of the Lit Review Class is to broaden your scientific horizons. You will read papers well outside of your area of interest and expertise. Most good scientists are extremely broad in their interests.

- When reading papers for this class (and in general), you should always be thinking carefully about these questions:
  
  o Why did the authors do the study? What was the problem they were trying to solve or big question that they were trying to address?
  
  o What was the hypothesis or question the authors had starting out? Sometimes this is not obvious, but this is the best place to start when reading a paper in order to understand the logic of the approach.
  
  o How did the authors do their research? 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 an understanding of the methods, depending on the paper and the research area. This class is much more about ideas than methods, so don’t worry too much about exactly how each experiment was done.
  
  o How do the authors interpret their results? Are there other interpretations? Sometimes the authors themselves will bring these up. What evidence is needed to distinguish between these interpretations?
  
  o What does this research mean? What is the logical extension of these results? What are the next questions to investigate?

- Remember, most cutting-edge research is not entirely correct! Papers that are completely correct are usually boring ones that are merely confirmations of something that was 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 or idea. However, the interpretation and extensions of the central idea is often where the discussion happens.

- There is an important distinction between Journal Clubs and Lit Review. Journal Clubs are usually focused on data, while Lit Review is focused on understanding why the question is important and what the answers mean.
Format

• This year we are doing 6 broad topics. The first session for each topic will be led by a faculty member who will pick the paper, give a little background, and lead the discussion. However, this is NOT a lecture! You are expected to read the paper very carefully and come prepared to discuss it.

• After the faculty-led sessions for each topic, the next 1-2 sessions will be led by 1st year MCB students.

• Check the website (http://libguides.fhcrc.org/MCBLitReview) for the schedule and papers for discussion. I will email with changes, but it is your responsibility to check the schedule every week.

• See the document “Discussion suggestions” for tips on how to effectively run a Lit Review discussion.

• No slides are allowed!

Choosing Papers

• You have been assigned a topic based on your choices. You have also been assigned partners. With your partners, you need to pick a paper that the class will discuss on the date assigned to you. Talk to the faculty member and other groups with that topic to ensure that the papers are not too similar.

• Pick a paper with a lot to discuss! Contact faculty members with expertise in that area and ask them to recommend papers that might be interesting.

• You can invite the faculty member to attend the class and provide extra expertise. Rich and I will be there, but we won’t know much about most topics!

• Look for papers in general interest journals like Nature, Science, Cell, PNAS, or PLoS Biology, or high-impact topical journals like Nature family journals, Cell family journals, or PLoS family journals (not PLoS ONE). Papers in these journals are usually written for a broader audience, which will make it easier for everyone to delve into the paper.

• Try to avoid papers with huge supplements since most of the data is not in the main text. If there is a supplement, it is not required reading.

• Feel free to email me with a few different papers to see if I think they are appropriate – I will rarely veto your choice, but I will tell you whether I think it’s a good or a bad choice for discussion!

• Avoid papers by local authors.
Timeline

- 4 weeks before your session: start thinking about the paper. Let me know if you want to meet and discuss different paper options.

- 2 weeks before your session: email me the citation of the paper your group has chosen, so I can put it on the website.

- 1 week before your session: let me know if your group would like to meet with me before the class to talk about how to frame the discussion. Email me to set up a meeting and come to the meeting with a draft of your questions. Most groups have done this in the past, and it seems to really help. I will also give you feedback after the class.

- 48 hour rule: if you want me to read papers or look through your discussion questions, please give them to me at least 48 hours before we plan to meet. Otherwise, I will not have time to properly read and think about them.

Expectations

- The papers may be difficult because most of them will not be in an area that you know much about. Expect to spend several hours reading the paper in preparation for class each week.

- The faculty may assign questions that you should use to guide your reading. You don’t need to write your responses to these questions, but you should think about them and be prepared to discuss during class. And, you should understand these questions better after the discussion.

- Students leading the discussion should have questions ready to discuss and know the background. But, everyone in the class is still responsible for reading the papers carefully.

- Everyone should also come to each class with your own questions about the paper. Don’t focus on technical items, but on questions of interpretation that relate to the central experiments.

- Come prepared to talk in class! This will be a very long quarter unless everyone is an active and engaged participant.

- Don’t be surprised if you get called on to answer a question.

- You will not get credit for the class unless you participate in discussions.

- You must be on time and attend every Lit Review session. The only exceptions are a death or serious illness in your family, or your own serious illness.