BC493-001 Seminar in Biochemistry
Wednesdays @ 12:00 pm, MRB312
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MRB 275 (office)

Course Objectives:

- Develop your ability to determine the value and relevance of the original literature in biochemistry. This will be accomplished by in-depth exploration and oral presentation of a recent scientific paper.
- Practice in preparing and presenting an oral presentation. This is an essential skill for a successful career in biochemistry and is also required in the majority of careers. You will often be judged on the basis of your ability to speak to a group.
- Begin thinking and doing some groundwork for your Senior Thesis

Class Schedule:

August 28th: Introduction to the course.
September 4th: Tips on delivering an effective presentation.
September 11th – through the end of semester: Student presentations

Grading

1. **Presentation topic (10%).** The topic and a primary paper for your presentation will be due 10 days prior to your seminar to me by email or in person. Feel free to come and chat with me well before the due date to discuss possible topics and papers.
2. **Abstract of presentation (15%).** Due **one week BEFORE your presentation** (by e-mail). One page, with your own title, 1 ½ spacing, 12 pt Times Roman font, and written in your own words. Plus a list of the primary literature cited. Abstracts will be graded for *spelling and grammar*, as well as content, organization, and proper references.
3. **Presentation (50%).** Must be based on a research paper from the primary literature, with supporting papers (including review articles) to introduce and give perspective to the topic. Each presentation will be between 35 and 40 minutes with 5 minutes for questions.
    - Content of the presentation:
        - Understanding of the topic
        - Appropriate introduction and background
        - Discussion of methods and results
        - Conclusions
    - Quality of the presentation:
        - Delivery
        - Audience contact
        - Handling of questions
        - Visual aids
    - LENGTH (if your talk is shorter than 30 minutes, points will be deducted).

4. **Presentation evaluations (10%).** Each student will evaluate each presentation using the evaluation forms. Your name and the speaker's name must be at the top of each form. Do not simply give your friends perfect scores (unless they truly deserve it). You need to provide constructive criticism.
5. **Attendance and participation in discussion (15%).** All students are expected to ask questions and participate in a lively discussion.

Traditional letter grades (A to F) will be assigned. The individual class assignments will constitute the percentage of your grade as indicated above. **Attendance for all presentations is mandatory.** Your final grade will be reduced for every unexcused absence.

Course Methods in Outline

- The easiest way to get into a presentation topic is by reading well-written review articles first. You should start by reading a recent biochemistry, cell biology, or molecular biology review in an area of special interest to you. Based on the review article, you may choose a cited primary research article or find one on your own related to the topic. The primary paper will provide the basis for the talk; the review(s) will help provide introductory information.
- Pay attention to the length of the original articles. Some very short 'letters' or contributions may not provide enough material. A good way to check for this is to look at the number of figures (more than 4, multi-panel – NOT ON THE SAME SLIDE).
- Please present work that uses biochemistry, cell biology, or molecular biology approaches; stay away from purely clinical research.
- Feel free to make an appointment with me WELL BEFORE YOUR TALK to discuss your chosen topic and specific paper.
- You will prepare a Power Point presentation on the selected topic.
- Pay close attention to the time it takes to give the presentation. Presentation time always goes faster when in front of an audience.
- On days that you are not giving your seminar, you will be required to fill out the evaluation forms given below to provide constructive criticism for the speaker (anonymous).

Choosing a Research Paper

⇒ Select a topic that interests you! (and will interest your audience)

- Begin by reading review articles.
- Read "News and Views" in journals like Science and Nature. Excellent journals with reviews/mini-reviews: Cell; Journal of Biological Chemistry; the Current Opinion journals; Trends in Biochemistry; Trends in Cell Biology; Trends in Biology; Trends in Genetics; Current Biology. These usually are written to discuss a paper that appears in the same issue.
- Find reviews and primary research articles using Pubmed: http://www.ncbi.nlm.nih.gov/pubmed/
- You must email your choice of topic to me and send me the reference for your chosen paper at least 10 days in advance. Note that only original research papers that contain original research findings can be chosen; these must be from high quality peer-reviewed journals and should not be older than four years.
- What if you find flaws/mistakes in the paper you chose? Point them out in a scientific manner, perhaps point out conflicting data in the literature. Be upfront, but respectful.

Abstract:

You must write a 1-page abstract that contains the following:

1. Your name, date and the title of your presentation (in your words)
2. A description of the general research problem
3. Why you thought this paper was important
4. Why the research is important
5. A brief synopsis of the results of the research paper
6. A short conclusion
7. List the reference for the main paper(s) that you are discussing on the abstract
8. **The abstract must be in your own words – not the abstract of the paper you select.**

The abstract should be tailored towards the readership (easy to understand without background information). It has to be in your own words. Use a short, general title (not the title of your selected paper or reviews). You should cite the reference of your paper/s in the following format (do not use the web address in your abstracts or the references presented at the end of the presentation):

> Authors (Year). Title. Journal, volume: inclusive page numbers.
> For example:
> Robzyk, K., Recht, J. and Osley, M.A. (2000). Rad6-dependent ubiquitination of histone H2B in yeast. Science, 287:501-504.

The abstract must be emailed to me at least 7 days prior to your presentation.

Preparing and Presenting:

General Considerations:

1. Content:

- Realize that different people have different perspectives and understanding of your topic.
- Don't start out by saying – 'I thought this would be a really interesting paper, but it turned out to be really bad'.... You'll immediately lose your audience.
- Make sure that you actually understand the points that you are presenting. Don't simply repeat points from the paper, don't simply repeat/memorize conclusions. Make sure you follow the author's arguments; make sure that the data supports the conclusions.
- Don't preface your discussion of a figure with 'I didn't really understand this experiment, but....'
- Bridge from simple to the complex.
- Only use known sources for your data and acknowledge the sources. This is especially important for web-based sources.
- Pay close attention to spelling!

2. Presentation style:

- Tell your audience why they should be listening to you. Give the significance (big picture) of the research in the beginning.
- Even if you write down your whole talk, still try to use 'spoken' language. A rehearsed talk given in written language is very hard to follow, and will come across as very formal and stiff.

- Your excitement or boredom about a subject tends to be highly contagious to the audience.
- Attempt to establish communication with the audience with frequent eye contact.
- Speak freely; try not to read from your notes.
- Practice good voice projection, tempo and tone. Speak slowly, articulate clearly
- Have confidence (even if nervous). If you feel relaxed and at home 'on stage', your audience will relax and concentrate on what you have to say.
- Avoid distracting the audience from listening to you by what you wear. Dress appropriately.
- Don't fidget.
- Avoid excessive pacing or gesturing
- Avoid speech mannerisms → tape yourself or ask a good friend to point them out for you.
- Don't talk too quietly, or mumble.
- Don't stand directly in front of the screen (unless you are pointing out a feature in an experiment.
- If using laser pointers, keep the beam steady, don't choreograph a laser show!
- Avoid acronyms, but when used, make certain you define them each time.
- Don't go over-time – it is inconsiderate and will compromise time for Q&A and evaluations.
- Don't use less than your allotted time; it sends out the wrong message.

3. Visual aids:

- Font size: stay close to the default values in Power Point. A slide that cannot be read from the back of the room is useless. Don't mix fonts too much. Serif fonts (such as Times) don't project well.
- Information content: don't make too many points per slide. Attention will drop if you present your audience with overloaded slides.
- If you have to start out by saying: "I know you can't really see what's on this slide, but..." or "this is a really confusing slide, but...." Then it is a useless slide.
- Remember that the title is the most valuable 'real estate' on your slide. Make it count – I like titles that are a statement of the result or a summary of what you are showing in the slide.
- Use pictures/symbols/diagrams rather than text, wherever you can.
- Vary your visuals. Follow text slides with graphics etc.
- Use animations, but don't get carried away.
- Use original figures from your paper, pay attention to resolution. If necessary, re-label and use additional aids to make figures generated for print media intelligible. See me if you have problems with resolution.
- A good rule of thumb: for a 35-minute talk, prepare between 25 and 35 slides (depending on amount of content per slide and your speaking pace). If you have more slides than minutes available for your presentation, you may be in trouble.

4. Questions and answers:

- Be polite and brief. Let the person who asks the question finish, even if you know what he or she is going to ask and you are excited to show off your knowledge. Don't laugh or brush off the question.
- If you don't understand the question, try to paraphrase without making the person who asked it feel awkward. Repeating the question is also helpful.
- If you don't know the answer, say so. Don't start to waffle, or respond with an answer unrelated to the question.
- Don't waste time going back to the slide that will help you to answer, unless you absolutely have to or someone explicitly asks you to. You've had your stage time already.

Format of the talk:

Aim for 35-40 minutes, followed by 5 minutes for questions. Points will be deducted if your talk is too short.

The general outline of a scientific talk is as follows:

- Broad Introduction
- Discuss original paper
- Conclusions / Future directions
- References used.

Think of the talk as telling a story. Scientific experiments often follow logical (or serendipitous) arguments. Try to explain why certain experiments were done; try to find the 'logical thread' in a series of experiments. Good science is often like a good detective story. The best talks tell an interesting story that excites and involves the audience. Remember, you should read several papers – both reviews and other publications - as part of your preparation. This will help with background, setting the stage for the paper you will present.

- **Introduction**
  - You need to develop sufficient background for the general listener to understand your talk.
  - Better to over explain and have all your audience appreciate the importance of your topic rather than to confuse a portion of your audience with jargon and/or technical speech. Properly introduce the important concepts/abbreviations etc.

- **Discussion of the primary research paper**
  - Progress smoothly into a discussion of the original paper(s).
  - Describe the data using original figures. Do NOT include the original figure legends, they are not made for this format. Rather, explain and introduce legends on your slide. 'Walk' the audience through an experiment.
  - When discussing more than one paper, describe how they complement / contradict each other.

- **Conclusions and future directions**
  - Briefly review the major points of your talk ('Take home lesson'). Come back to the main questions / hypotheses stated in the introduction. What did we learn? What are the future directions?

- **References/citations**
  - As a final slide, list your references. Give their full citation, including authors, paper title, year published, vol.#, etc.
  - For material taken from the web, try to be as descriptive as possible. Give the title of the site and the web address.

Combating nervousness:

There is no remedy for stage fright, but you can make it more bearable and less noticeable by using the following tricks:

- Know your subject matter
- Be prepared
- Have EXCELLENT slides
- **Practice** your seminar out loud several times. Also recording it with your phone - then listening to yourself carefully - might help to eliminate filler words. Practice in front of friends.

- **Practice again... And again**. Make sure you know which point you want to make with each slide.
- Know your transitions. Identify something on your current slide that will remind you of your transition to the next slide.
- Have the first few sentences of the Introduction especially well rehearsed. It gets easier once you are underway.
- Don't forget to breathe. Good breathing techniques work wonders against nervousness.
- Don't wobble and weave, find something to do with your hands (index cards, a pointer....)
- Familiarize yourself with the venue. Picture the seats filled with people smiling at you.

Technical aspects:

It is your responsibility to check that equipment is working. Our room should be fully equipped. You should set up at least 10 minutes prior to your seminar, especially if you have never used the equipment before. You don't want to keep the audience waiting, and you don't want to increase your anxiety level by setting up under time constraints.

A few notes to the audience:

- Please be on time. It is very disruptive for all if people enter the room during a presentation.
- Don't talk or whisper with your neighbor – it is distracting for the speaker and others around you. Same is true for texting.
- Cell phones off.
- NO TEXTING/WEB BROWSING ETC.
- Even if you were up late the night before, don't make a public display of boredom or fatigue during the talk – what would you think if you were the speaker?
- Be respectful but upfront in your evaluation. Provide constructive feedback. The evaluation is anonymous.

BC493 Seminar Evaluation

Speaker's Name: _____

Your Name: _____

Please be honest! If you didn't follow the talk, say so. It's not a reflection of your knowledge; it's the lack of the speaker's ability to communicate the big picture/experimental details, etc.!

(Circle one number: 5 is best)

Overall impression of the presentation:		1	2	3	4	5
Was the "big question" explained clearly?		1	2	3	4	5
Was sufficient background provided?			1	2	3	4	5
Were the methods understandable?		1	2	3	4	5
Were the results explained clearly?		1	2	3	4	5
Showed enthusiasm & maintained audience contact?	1	2	3	4	5	
Avoided jargon and abbreviations?		1	2	3	4	5
Repeated the essentials?		1	2	3	4	5
Interacted well with slides?		1	2	3	4	5
Spoke clearly, precisely, and at a good pace?		1	2	3	4	5
Questions answered clearly?		1	2	3	4	5
		POOR----------				----------EXCELLENT

State at least two aspects of the talk that you think should be improved:

State at least two aspects of the talk that you really enjoyed: