Chemistry 790
Biochemistry Seminar/Journal Club
Fall 2016

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Course time: 12:00 p.m. – 1:50 p.m., Fri., GMCS 305

Office hours: 12:00 – 1:00 p.m., Tuesday and Thursday.
or
Call or e-mail to make an **appointment** for just about anytime.

The course:

Open to graduate students in Biochemistry and Molecular Biology and related disciplines.

Expected Learning Outcomes-
1. Students will learn to research the biochemical literature.
1. Students will learn to critically read and evaluate scientific journal articles.
2. Students will obtain experience in making scientific seminar presentations.
3. Students will learn to articulate suggestions for improvements to presentations given by others.

Each student enrolled in the course will give an oral presentation on an original research paper (journal article) from the scientific literature. The student should select an appropriate paper together with his/her research advisor. The paper chosen must be emailed as a .pdf file to the instructor by noon on Thursday September 22, 2016. The instructor will post the .pdf files on Blackboard for you to download.

Every student in the class must read and become familiar with the paper prior to its presentation in class.

Your grade for the course will be based upon:

1) Your own oral presentation (65%)

2) Your participation in classroom discussion (15%). To encourage and make class participation easier, each student must write down three questions that he/she has about each paper to be presented and email these to the instructor at least 2 hours prior to the class meeting. (You might also want to bring a copy to class with you.) For example, questions

might be about an experiment that you believe should have been done, but was not; or it may be about questionable data; or about how a particular technique is done; or about the author's interpretation of the data; etc. The questions should not be about trivial items (e.g., What was the concentration of KCl in buffer A?), but rather thought-provoking. With these questions thought out and prepared ahead of time, you should have no trouble participating in the discussion of the paper during class. You will not need to prepare questions in advance of the Ph.D. student seminars or for the 791 presentations.

3) Your written critiques of other speakers' presentations (20%). This is due to the instructor by noon on the Tuesday following any Ph.D. or Master's student seminar presentation. Length of critique: 1 page, single spaced, 12 point Arial font, 1.25 inch margins). This should consist of two parts. The first part (**half a page or less**) should briefly summarize the presentation. The second part **(at least a half page)** should point out what you liked about the presentation (Powerpoint slides and the presenter's organization and delivery) as well similar aspects of the presentation that you feel could be improved upon. **This second part should be at least 18 lines of text** (@ 12 point Arial font and 1.25 inch side margins)**.** These critiques will be shared with the presenter, so make your criticisms constructive in nature.

Please note that you are required to attend and write critiques on the PhD student talks and to attend and write critiques on the 791 talks. However, there is no prior reading or preparation required for these non-790 presentations.

Attendance is required and unexcused absences will negatively affect your grade.

Some guidelines for your oral presentation:

1) Together with your thesis advisor, choose a journal article to present. It should be a recently published paper, *not over a year old*. The paper cannot be from your own research group.

2) E-mail a .pdf file of the chosen paper to the instructor by Thursday September 22, 2016. The instructor will take responsibility for distributing your paper and advertising your seminar.

3) It is important as a seminar speaker that you know your allotted time and don't go over it. However, it must also not be too short. If your presentation is considerably too long or too short, it will negatively affect your grade. Make use of your full time. *If it were given without interruptions,* your presentation should last approximately 35-40 minutes in length. This will permit time for interruptions during the talk and for discussion afterwards. Be sure to practice out loud ahead of time, several times (preferably in GMCS 305 when it is not occupied). Better yet, practice in front of your own research group! Check to make sure that your presentation slides can be projected correctly and that any animations you plan to show are functional. Make sure that the length of the presentation is appropriate. You will lose credit if your presentation is unreasonably short or unreasonably long.

4) If you have not done this type of presentation before, it is *highly recommended* that you write out beforehand *every word* that you wish to speak. That way you will not be stumbling around and boring your audience. This seems like a tedious task, but there is no substitute

for having thought carefully through an entire presentation. It is better to read than to be fumbling around trying to think about what you want to say. As you become more experienced at giving science presentations then you might attempt to work from an outline. List the important points that you wish to make over the course of the presentation and then work on the transitions that get you from one slide to the next. Knowing where you are headed will greatly influence what you share with your audience and improve the logical flow of the arguments you make in your seminar.

5) Any good story has a beginning, a middle and an end. Like a story, you need to give enough background information at the beginning of your seminar so that your audience will be able to make the journey through the experiments and draw logical conclusions with you. Although you should give some general background as an introduction, you must avoid the temptation to share everything you know about the topic with your audience. *Most of the time of the talk should be devoted to a discussion of the paper at hand and the data within it.*

6) Even though everyone should have a copy of the paper in front of them, you must use Powerpoint or equivalent software for your presentation. Use of the images helps to keep people oriented. Make sure that you have everything set up well ahead of time so that the beginning of class is not delayed. Last minute computer problems are not an excuse; you should plan that such problems will occur and allow yourself time to fix them.

   Hint: When you download images from the on-line version of a published paper, you often have a choice of a high-resolution image or a lower-resolution image. You will want to download the high-resolution image for adequate resolution on the large screen or else your image will be blurry.

7) Items to talk about:
   A) Introduction—What information will your audience need ahead of time to make sense of the experiments that were performed? What problem does the paper address?
   B) Methods—What technical approaches have been employed to address the problem? This may or may not be presented separate from the experimental results section.
   C) Results—What experiments were performed and what were the results? This is the heart of the paper and should be the major part of your presentation.
   D) Discussion—What conclusions can we draw from the experimental data produced in the study? How well do the experimental results substantiate the author's conclusions? What is the significance of the paper? What would you do differently? If you were a member of this group, what kinds of experiments would you do in the *future*?

      Important Hint: When you present a data figure on the screen for discussion, it is <u>not</u> sufficient to say "As you can see, Figure 1 shows 'such and such." It is usually necessary to go through the figure lane by lane (if it shows a gel for example) or line by line (if it shows a table) or curve by curve (if it shows a graph), etc. Consider instead to say something like, "Here is a Western Blot in which antibody X was used to detect protein Y in Z cells" or "In this graph, the total enzyme activity is plotted as a function of increasing inhibitor concentration". Then you are ready to give your interpretation of

what the data suggest. In short, you must demonstrate and explain to the audience how the data shown in the figure leads to the conclusions being drawn.

Remember, a good seminar takes the audience on a journey of discovery. A good seminar tells a good story. And everyone loves a good story.

SYLLABUS STATEMENT for Students with Disabilities

If you are a student with a disability and believe you will need accommodations for this class, it is your responsibility to contact Student Disability Services at (619) 594-6473. To avoid any delay in the receipt of your accommodations, you should contact Student Disability Services as soon as possible. Please note that accommodations are not retroactive, and that accommodations based upon disability cannot be provided until you have presented your instructor with an accommodation letter from Student Disability Services. Your cooperation is appreciated.

CATALOG DESCRIPTION of course

CHEM 790. Seminar (1-3)
An intensive study in advanced chemistry. May not be substituted for Chemistry 791. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree