

## **Chemistry 791 Research Seminar Fall 2018**

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

**Office hours:** Wed. 8:30-10:00 a.m. and Thurs. 11:00 a.m.-noon, OR  
Call or e-mail to make an appointment, OR  
Drop by my office or lab (CSL 325)

**The course:**

Open to graduate students in Chemistry & Biochemistry.

*Course description*-The purpose of this course is to give students an opportunity and an audience to present their original research findings. Students should enroll in Chem 791 after they have defined and begun their thesis research project and acquired some preliminary data that demonstrates its feasibility. As such, your Chem 791 seminar will be a “thesis proposal.” At the time of your seminar, your research should neither be too preliminary, nor should it be too near to completion. Your thesis advisor should be able to help you decide when you are ready to enroll in this course, as opposed to Chem 790.

Prior to your presentation, you must prepare an approximately 1 page summary that describes your proposed research project. This summary must be pre-approved by your thesis advisor. e-Mail your approved research summary to the instructor by Monday, two weeks prior to your scheduled Chem 791 presentation. The instructor will review it, distribute it to the remaining members of the class, and advertise your seminar to the rest of the members of the department.

You will then present your thesis proposal as a seminar to the combined Chem 790/791 classes and whomever else wishes to attend. In your oral presentation, you should give some background and history of the overall question or problem you intend to investigate, state the specific aims of your research, and then describe the experimental plan and methods you have been and will be using to achieve your research goals. You should work closely with your thesis advisor in preparing and practicing your 791 presentation.

*Participation in Chem 790*-Besides making your thesis proposal seminar, participation in Chem 790 is also mandatory of all students enrolled in Chem 791. The only exception is that your thesis proposal qualifies as your seminar.

Each student enrolled in the Chem 790 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 Monday, two weeks prior to your presentation date. The instructor will distribute the .pdf files to the rest of the participants by e-mail one week prior to your presentation date.

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 (60%)
- 2) Your critiques of other speakers' presentations (40%). This is due to the instructor one week after any Ph.D. or Master's student seminar presentation. Write a one-page critique in which you briefly summarize the presentation and point out what you liked about it as well as aspects of the presentation that you feel could be improved upon. These critiques will be shared with the presenter, so please keep your criticisms constructive in nature.

Attendance is required and 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 Monday, two weeks prior to your presentation date. 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. You have 50 minutes for your presentation. Therefore, if 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). Check to make sure that your presentation slides can be projected correctly and that any animations that 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 a good exercise to 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 wish to make over the course of the presentation and then work on the transitions that get you from one 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? What would you propose to do in the future?

Hint: When you present a data figure on the screen for discussion, it is not 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.