

**Chemistry 790
Seminar
Spring 2024**

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Course time: Friday 1:00 to 1:50 p.m. (or until 2:50 p.m., if needed)

Office hours: By appointment.

The course:

Open to graduate students in Chemistry & Biochemistry.

The purpose of this course is to give students mentored practical experience with reading the scientific literature and communicating science via seminar-style presentations.

Each student enrolled in the course will give an oral presentation on a research topic, relying on the results of a recently published study from the scientific literature. The presenter should select an appropriately current (published in the previous 24 months) and interesting paper together with their research advisor. It is expected that the topic will be related to the presenter's research work, but it should not be your thesis project nor should any paper come from the presenter's laboratory. The principal research paper on which the presentation will be based should be emailed as a .pdf file to the instructor two weeks prior to your presentation date. The instructor will share the .pdf file with the rest of the class via e-mail.

Every student in the class must familiarize themselves with the seminar topic by reviewing the paper prior to each presentation.

In the weeks you are not presenting you are expected to attend the seminars of other students enrolled in Chem 790 or 791. After every presentation you will write a one-paragraph summary of the presentation topic AND a one-paragraph critique of the presentation (comment on what was effective and where there might be room for improvement). Presentation critiques will be shared in a redacted (anonymous) form with the presenter, so please keep your criticisms constructive in nature. Critiques are due within 72 hours (by Monday evening) after a presentation and should be e-mailed as text (please not as a .pdf file) to Dr. Huxford at <thuxford@sdsu.edu>.

Grading

1. Your own presentation: 66 points – Successful completion of your seminar presentation on its scheduled date will earn you 66 points.
2. Your critiques of other speakers' presentations: 34 points – Students will earn 3 points for every seminar they attend and submit a summary/critique. Therefore, you can miss two seminars and still score a 94/100 points and earn an A. If you miss three seminars, then the best you can score is 91/100 points, which is an A-, and so on.

Some guidelines for your oral presentation:

1. Together with your thesis advisor, choose a relevant topic for your presentation. It should be related to your own thesis research, but rely upon recently published work from other labs.
2. E-mail a .pdf file of a paper from which your presentation will be based to the instructor two weeks prior to your presentation date. The instructor will take responsibility for distributing your paper to your classmates 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 total for your presentation. This includes time for questions after you are finished speaking. Therefore, if given without interruptions your presentation should last no more than about 30-35 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. Check to make sure that your presentation slides can be projected correctly and that any animations that you plan to show are functional.
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. This may seem like a tedious task, but there is no substitute for having thought carefully through an entire presentation. 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 during your seminar.
5. Do not bring overly extensive notes to your presentation because this may tempt you to read your notes. Ideally you will be pointing to items on your slide or watching your audience to see how well your message is being received.
6. Slides should contain a title and data, a schematic diagram, or, as needed list of bullet points. If a slide contains a good deal of text then take the time to read it out loud to the audience so that they can keep up with you. But as much as possible, you should avoid having the actual words of your seminar printed out on your slides. Rather, your slides should provide the visual support for your message and function to guide you through your presentation, reminding you about what comes next.

7. 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 information you choose to present and draw logical conclusions with you. Although you will give some general background as an introduction, you should avoid the temptation to share the whole history of science or everything you know about the topic with your audience. Rather, keep the introduction as concise as possible so that most of the time of the seminar is devoted to a presenting the experimental data that reveal new understanding and lead us all to arrive at the conclusions of the presentation.
8. Even though everyone will have reviewed the paper you have shared, you must use Powerpoint or equivalent software for your presentation. Use of the images from the paper should be cited. 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 might appear jagged or blurry. Make sure that you have everything set up well ahead of time so that last minute computer issues do not cause delays.
9. Science is best communicated using the following sequence:
 - a. Introduction—What information will your audience need ahead of time to make sense of the results of experiments that you plan to describe?
 - b. Methods—What technical approaches have been employed to address the research question? 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 most research papers and should be a major part of your presentation.
 - d. Discussion—What conclusions can we logically 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 findings? What would you do differently? What would you propose to do in the future?
 - e. 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 each 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.