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Meeting time: Mondays, 2:20–3:10 PM, Marsh Life Science 107.

Office hours: Thursdays noon–2:00 pm.
Feel free to stop by my office as needed or make an appointment.

Course description: We are spending the semester addressing a key skill for chemistry majors—the presentation of data in oral form. Whether it is your data or not, it is important that you can place some value on that information for your audience.

The plan is to use the semester to selected, research, and build a presentation. This requires ample outside reading early in the semester as well as some discussion. Additionally, significant effort is required to produce (and practice!) a presentation in public.

Learning goals: The goal of this course is for students to perform some critical analysis of the chemical literature and disseminate that analysis in both written and oral form. Therefore, we need to have students

1. Practice skills in literature searching.
2. Synthesize important ideas from multiple sources.
3. Evaluate literature with respect to the quality of conclusions and their potential impact.
4. Summarize data into less formal short presentations.
5. Execute a formal colloquium-type presentation.

The department has retained this exercise for decades because these skills are essential. It is routine that individuals in any job sector are required to present on relevant topics, use appropriate resources to support ideas or plans, and provide succinct reports. These are skills that get jobs and lead to promotions.

Selection of topics: Topic selection for a presentation is a critical. These are my three major thoughts on this subject.

1. Your topic should be <u>current</u>, which would be demonstrated by significant activity in the last five years.
2. Your topic must be <u>chemical</u>. This would appear to be obvious, but it is easy to get trapped in overly extensive background or applications. The litmus test of how chemical a presentation is come from asking, "does this topic primarily deal with the physical properties of molecular substances?"
3. Your topic should be sufficiently broad but not overly so. For example, "chemotherapeutics" is much too broad, representing hundreds of compounds and decades of research. Topics of too narrow focus like, "the rotational spectrum of…" are equally problematic. Ultimately, your topic should be defined by thesis, or an argument

of some kind, rather than a topic statement. It is easier to find that balance of depth and breadth when you are proving a point.

Topics *must* be approved by the instructor in advance.

Section of topics, nitty gritty: It is a big chemical universe, and lots of interesting things are going on out there. However, choosing an exact topic of interest can be a challenge. Your personal interest should be a deciding factor. Good places to start looking are *Chemical and Engineering News* or *Chemistry World*. These are the trade journals of the American Chemical Society (ACS) and Royal Society of Chemistry, respectively, which often present topics of broad interest. If you have a better idea of where to start, looking at review articles, like those in *Chemical Reviews*, *Accounts of Chemical Research*, or *Chemical Society Reviews* are good sources. Of course, many journals present review articles as well as their primary source content. One of the pitfalls about review articles is that the content can, even in a few years, become dated. A valid strategy to avoid that is to start with a slightly older review article (say, 4–8 years old) and follow how the subject has advanced since then using primary literature. That also allows you to develop easily proven theses like 'the field has moved in [insert your analysis here] direction" in the last several years.

Prospectus: You will present to me and your peers in the class what your topic is. These should be about five minute presentations (two or three slides) and include some citations. The goal is to convey the thesis of your presentation, what it is that you will be trying to prove. To compel the group you are presenting a valid thesis, you would want to state two to four supporting key ideas, which derive from the literature. Naturally, your peers may have some questions when you're done.

One-paragraph summary: This is pretty self-explanatory. To supplement your prospectus, please write a one-paragraph summary. To be effective, this document would state your thesis and main points to support that idea.

Presentations: The presentation is the core of the course. It is the major product of your work, and it is the greatest component your evaluation for the course. Presentations need to be chemistry-centered, exhibit both breadth and depth, well organized, and polished. It is a tall order, but you have all semester to work on it. We will talk a lot about presentation structure, style tips, and dos/don'ts throughout the semester. However, part of the reason this is attached to the department seminar series is for you to watch those presentations with the critical eye about what you might emulate that is good and what you would avoid that is ineffective.

Presentations are limited to a half hour total, which we divide into 25 minutes of presentation and reserve five minutes for questions. That 25 minute number is an important target. Running significantly short suggests too little content, and running significantly longer with unleash the ire of your peers.

Your presentation will have an accompanying, brief write-up. Details on the write up will be discussed in class. The write up and the drafts of the document are my way of helping you to hone in on content and let you focus on developing a high quality presentation.

Peer critiques: To better understand your own presentation, we will consider not only the content of each other's presentations but the mechanics as well. While you are not grading your peers, you are providing them feedback, which they will see. Therefore, we will develop criteria that we will consider together and agree how that is delivered.

Plagiarism: We will have a group discussion on the idea of plagiarism in class. While we are looking for you to provide some critical analysis, it is essential that you cite all ideas, content, and images that are used in your presentation and write up, which are not your own, and that you conform to UVM standards for academic honesty.

Grading: Your performance in this course will depend on four factors (in order of importance):
1) The quality and completeness of your presentation (60%).
    - Presentation mechanics (slides, organization, continuity, clarity, etc.): 70%
    -Content (scope and depth) from presentation, paper, and Q&A: 30%
2) Prospectus & summary of topics: 20%
3) Peer critiques: 20% Depending on the number of students, you will be required to submit critiques for approximately half of the presentations.

All items are due in class (at 2:20 pm) unless otherwise noted.

Course Schedule (tentative)

Date	Topic/*assignment*
1/14	Presentation basics; topic selection
1/21	No class—Martin Luther King Day holiday
1/28	*Topic round robin*
2/4	*Topic prospectus presentations*
2/11	*Topic prospectus presentations*, cont'd
2/18	No class—Presidents' Day holiday
2/25	*Write-up drafts due,* presentation feedback
3/4	*Drafts of slides*, Peer-critique lesson
3/11	No class—spring break
3/18	Student presentations
3/25	Student presentations, *peer critiques for current talks due*
4/1	Student presentations, *peer critiques for current talks due*
4/8	Student presentations, *peer critiques for current talks due*
4/15	Student presentations, *peer critiques for current talks due*
4/22	Student presentations, *peer critiques for current talks due*
4/29	*Final write-ups & peer critiques due*, analysis of group

You should try to attend all department seminars. These are most Mondays and some Wednesdays. Please check the department Web page for scheduling.

Department seminars are informative for their content, but this is a time for you to see what is being done in scientific presentations and decide what you think is a helpful practice and what is not.