

# CHEM 294 SEMINAR IN CHEMISTRY

Overview

## Handouts

- ▶ Course Syllabus
- ▶ Seminar Evaluation Handout
- ▶ Seminar Schedule

## Course Materials

- ▶ Departmental Chem 294 website
  - <https://www.csus.edu/college/natural-sciences-mathematics/chemistry/grad-program.html>
- ▶ Course syllabus
- ▶ Seminar schedule
- ▶ Seminar evaluation form
  
- ▶ Tips and information on:
  - Preparing a literature seminar abstract.
  - Preparing a literature seminar presentation.

## Seminar Overview

- ▶ Attendance Requirement:
  - ~14 Seminar Dates (including today's and assuming no cancelled seminars)
  - You must attend ~80% attendance of seminars (e.g. 11 out of 14)
    - unless seminars are cancelled
    - ▶ *You must sign the attendance list.*
    - ▶ *No credit is given if you arrive after the speaker has started.*
- ▶ Grading: Credit/No Credit
  - Based on attendance

## Seminar Overview

- ▶ Seminars – Fridays 1-2pm-All Zoom meetings this semester
  - Show up on time; don't leave early
  - Turn off cell phones during seminar
  - Pay attention to speaker
  - Please, no distractions during seminar
- ▶ Types of Seminars
  - MS student literature seminars
  - Research seminars
  - Other seminars (career seminars, undergraduate seminars)

## Literature Seminar Overview

## Overview

- ▶ Introduction
- ▶ How to Select the Topic and Get Information
- ▶ How to Organize the Information
- ▶ How to Prepare a Professional Seminar
- ▶ Practice Makes Perfect
- ▶ Seminar Day
- ▶ Summary

## Introduction

- ▶ Literature Seminar:
  - Requirement for advancing to candidacy.
  - The seminar can not be given the same semester as your Thesis Research Seminar.
- ▶ Seminar topic
  - Determined in conjunction with research advisor
  - Must be distinct from your research area
  - Must be distinct from topics given in literature seminar form the past two years. (See [https://www.csus.edu/college/natural-sciences-mathematics/chemistry/\\_internal/\\_documents/chem-294-historical-grad-student-seminar-topics.pdf](https://www.csus.edu/college/natural-sciences-mathematics/chemistry/_internal/_documents/chem-294-historical-grad-student-seminar-topics.pdf))

## Introduction - continued

- ▶ Students are advised to give their literature seminar in their second or third semesters.
- ▶ [https://www.csus.edu/college/natural-sciences-mathematics/chemistry/\\_internal/\\_documents/literature-seminar-topic-approval\\_2.pdf](https://www.csus.edu/college/natural-sciences-mathematics/chemistry/_internal/_documents/literature-seminar-topic-approval_2.pdf)
- ▶ Literature Seminar Topic Approval Form
  - Submission open February 1<sup>st</sup> – March 1<sup>st</sup> for a fall semester seminar.
  - Submission open September 1<sup>st</sup> – October 1<sup>st</sup> for a spring semester seminar.
  - Must be approved by graduate committee before seminar abstract can be approved.
  - In case of similar seminar topics being submitted, approval will be granted to the earliest of the topic submissions.

## Introduction - continued

- ▶ [https://www.csus.edu/college/natural-sciences-mathematics/chemistry/\\_internal/\\_documents/literature-seminar-abstract-approval.pdf](https://www.csus.edu/college/natural-sciences-mathematics/chemistry/_internal/_documents/literature-seminar-abstract-approval.pdf)
- ▶ Literature Seminar Abstract Approval Form
  - Due May 1<sup>st</sup> for a fall semester seminar.
  - Due November 15<sup>th</sup> for a spring semester seminar.
  - Must be approved by graduate committee before seminar date is assigned.

## Introduction - continued

### ► Sources of Help:

- Your Research Advisor
- Seminar Coordinator
- Fellow Graduate Students
- The Graduate Coordinator
- Professors That Work in Seminar Field

### ► Departmental Chem 294 website

- <https://www.csus.edu/college/natural-sciences-mathematics/chemistry/grad-program.html>
- Tips and information on:
  - Preparing a literature seminar abstract.
  - Preparing a literature seminar presentation.

## Introduction - continued

### ► How your seminar will be evaluated

- Time – approx. 50 minutes
  - 40 minutes minimum, 55 minutes maximum
  - Seminars outside of the allowed time range will not be considered passing.
- Faculty Evaluations
  - Seminar evaluation form
  - Must be rated “pass” in both presentation and content categories by all or all but 1 faculty in attendance; remediation in other cases.
    - “Pass” equates to an overall score of 3 or higher in each category.
    - See Chem 294 syllabus for complete details.

## Introduction - Timeline

Time	Tasks to Complete
<b>Semester Before Seminar</b>	<i>Early in the semester:</i> Choose general topic area, preliminary literature search, produce title and abstract; <b>Submit "Literature Seminar Approval Form"</b> <i>Late in the semester:</i> Further literature search, produce abstract; Submit "Literature Seminar Abstract Approval Form"
10 Weeks Before	Complete literature search, read main articles, obtain background literature
6-8 Weeks Before	Complete all reading, organize material, choose title for talk
4-6 Weeks Before	Complete detailed talk outline, prepare graphical information and draft slides for talk

## Introduction - Timeline

Time	Tasks to Complete
<b>1 Month Before</b>	<b>Submit detailed talk outline to Seminar Coordinator</b>
2-4 Weeks Before	Practice talks, revision of slides
<b>1 Week Before</b>	Continuing practice talks; <b>Submit abstract** (with references) and PowerPoint slides to Seminar Coordinator</b>
<b>Monday of seminar week</b>	<b>Research advisor must e-mail approval of your seminar to Seminar Coordinator</b>

\*\* In order to fit on the flier announcing the seminar, this abstract should be a shorter version of that submitted with the seminar approval form.



## Topic Selection

- ▶ The topic must be in a different area (but not necessarily different discipline – e.g. organic chemistry) than the thesis topic
  - Example: a student whose thesis research is on using an HPLC method to analyze atmospheric aerosols should not cover HPLC methodology or atmospheric aerosols
  - The less related the topic is to your thesis research, the more you can expect to learn

## Topic Selection

- ▶ The topic must be distinct from other literature seminars given in the past two years.
  - [https://www.csus.edu/college/natural-sciences-mathematics/chemistry/\\_internal/\\_documents/cem-294-historical-grad-student-seminar-topics.pdf](https://www.csus.edu/college/natural-sciences-mathematics/chemistry/_internal/_documents/cem-294-historical-grad-student-seminar-topics.pdf)



## Topic Selection – Continued

- ▶ Topic should be in a chemistry, biochemistry, or applied chemistry area.
- ▶ The topic should be in a significant area and of recent concern (primary research less than 4 years old).
- ▶ A good source of new and significant research is *Chemical and Engineering News* (especially Science and Technology Concentrates).
- ▶ Other sources are review articles, *Nature*, *JACS*, *Science*, *Scientific American*, etc.

## Topic Selection – Continued

- ▶ The topic material should be of proper breadth and depth
- ▶ Topic area should have at least 10 publications in scientific journals
- ▶ Examples:
  - Microchip capillary electrophoresis is too broad
  - Application of microchip capillary electrophoresis to the analysis of banana slug trail chemicals is too narrow
  - Application of microchip capillary electrophoresis to the analysis of various types of mucous may be better

## How to Get Information on the Topic

- ▶ Learn to use Scifinder/Chem Abstracts.
- ▶ Pick up the keywords to enter into a search.
- ▶ Read books and review articles to enhance your understanding of the topic area.
- ▶ Check references of papers.
  
- ▶ You will need at least 10 peer-reviewed literature references; at least 6 of these must be primary literature articles (as opposed to review articles).
  - Several articles should be from within the past 4 years.
- ▶ On-line encyclopedias such as Wikipedia should never be used as references

## Organization of Material

- ▶ A traditional scientific presentation will be organized as follows:
  - Overview
  - Introduction (background and objectives)
  - Methods (description of experiments)
  - Results and Discussion (what did the experiments show and what are the implications)
  - Conclusions and Future directions
  - Acknowledgements

## Organization of Material - continued

- ▶ In preparing materials, you need to:
  - Understand the main concepts (both in the papers and in background material)
  - Be able to explain the concepts to the audience
- ▶ Select some specific examples and graphics to use in making slides

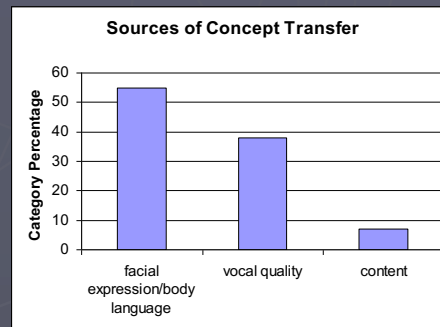
## Organization of Material - continued

- ▶ In preparing your seminar, consider:
  - Making clear the research objectives and significance
  - Connecting the choice of research methods to the research objectives
  - Clearly explaining any research data
  - Presenting and evaluating the conclusions from the research
  - A synthesis of information from your research and background articles is expected to present a cohesive description of your research topic

## Tips on Seminar Preparation

### Textual vs. Graphical

- ▶ Studies of interpersonal communications show that:
  - 55% comes from facial expressions and body language
  - 38% comes from vocal quality or tone of voice
  - 7% comes from content, the actual meaning of the words



From "Scientifically Speaking", The Oceanography Society

## Tips on Seminar Preparation

### Preparation of Slides

- ▶ Aim for one to four concepts per slide
- ▶ No more than 2 figures per slide
- ▶ Assume you will spend about one to two minutes per slide
- ▶ I suggest preparing a few "extra" slides that can be removed

## Tips on Seminar Preparation

### DOs and DO NOTs - 1

- ▶ Make sure the font is large enough to be read from back of room
- ▶ Proofread slides –mistakees ar embarrassing
- ▶ BE Consistent about fonts **and** capitalization
- Don't have slides cluttered with text boxes in the wrong places
- ▶ Test animation sequence; don't abuse animation features

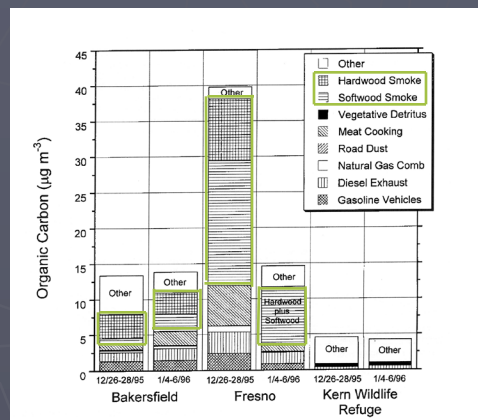
Keep it simple, edit for brevity

## Tips on Seminar Preparation

### DOs and DO NOTs - 2

- ▶ Check figure quality
- ▶ Avoid data tables
- ▶ Highlight important parts of complicated figures
- ▶ Have someone else review your slides
- ▶ Reference borrowed material

Improved Figure



Oops, from Schauer and Cass, ES&T, 2000

## Practice Makes Perfect

- ▶ Figure out what you want to say for each slide
- ▶ Figure out how to use the technology available
- ▶ Have someone point out any annoying nervous habits you have
- ▶ Practice with actual equipment and keep track of time

## Seminar Day

- ▶ Dress appropriately
- ▶ Make sure the technology is available and ready with plenty of time to spare
- ▶ Look at audience, not at slides
- ▶ Be prepared to answer questions

## Summary

- ▶ View the seminar as a learning opportunity (both on the topic and on giving seminars)
- ▶ Make yourself comfortable with your subject and with your presentation
- ▶ Give yourself enough time to make improvements

## Acknowledgements

- ▶ I want to thank past audiences who had to put up with some of my “learning experiences”