CHEM 294
CHEMISTRY SEMINAR

Overview and Tips for Student Presentations

Handouts

- Course Syllabus
- Seminar Evaluation Handout
- Tentative Seminar Schedule

Seminar Overview

- Types of Seminars
  - MS student literature seminars
  - Research seminars
  - Other seminars (career seminars, undergraduate seminars)

- Attendance Requirement:
  - 14 Seminar Dates (including today's and assuming no cancelled seminars)
  - You must attend 11 seminars (sign list)
  - With permission, one of the above 11 seminars may be replaced

Seminar Overview

- Grading: Credit/No Credit (must have 4 semesters)
  - Based on attendance
  - Students giving a literature seminar must be given a passing grade on evaluation forms

- Literature Seminar:
  - Tips on **how** to plan and give seminar given later
  - The seminar can not be given the same semester as your Thesis Research Seminar
  - Students should give their literature seminar in their second or third semesters
  - Must have done before you can advance to candidacy

Seminar Overview
- My Expectations

- Show up on time; don't leave early
- Pay attention to speaker
- Please, no distractions during seminar
- Student seminars: Be committed

Seminar Schedule –
Tentative Schedule

- See Handout

Some Tips on Giving a Literature Seminar

Based on a presentation designed by Dr. Roy Dixon

Chem 294 Organizational Meeting

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

- Public speaking is an important skill
- Perceive literature seminar as an opportunity
- Your scientific reputation depends on the quality of your presentations
- A guide to giving presentations will be posted on the course website (http://www.csus.edu/indiv/g/ghermanb/F12_294.htm)

Introduction - continued

- Sources of Help:
  - Your Research Advisor
  - Seminar Coordinator (me)
  - Fellow Graduate Students
  - The Graduate Advisor
  - Professors That Work in Seminar Field

Introduction - Timeline

Time	Tasks to Complete
Semester Before Seminar	Choose general topic area, preliminary literature search, read main articles, obtain background literature, submit abstract to graduate committee for approval
6 Weeks Before	Complete literature search and all reading, organize material, work on detailed talk outline
4 Weeks Before	Complete detailed talk outline and submit it to coordinator, begin work on PowerPoint slides
2-3 Weeks Before	Start giving practice talks to your advisor and friends
1 Week Before	Complete slides for talk and submit to coordinator along with abstract and primary references, continue to practice!
Monday of seminar week	Get advisor to give their ok to coordinator saying talk is ready to be given

Topic Selection

- The topic must be in a different area 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 – Continued

- Topic should be in a chemistry, biochemistry, or applied chemistry area.
- The topic should be in a significant area and of recent concern.
- 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 mucous secretions in animals may be better
- Material selected should tell a story, not be disjointed facts
- Must submit abstract for approval by graduate committee

How to Get Information on the Topic

- Learn to use Scifinder/Chem Abstracts
- Pick up the key words to enter into a search
- Read books and review articles to enhance your understanding of the topic area
- Check references of papers
- I would recommend 2 to 3 review articles or books, ~3 main articles to focus on, and ~10 general field research articles (to enhance understanding of concepts)

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

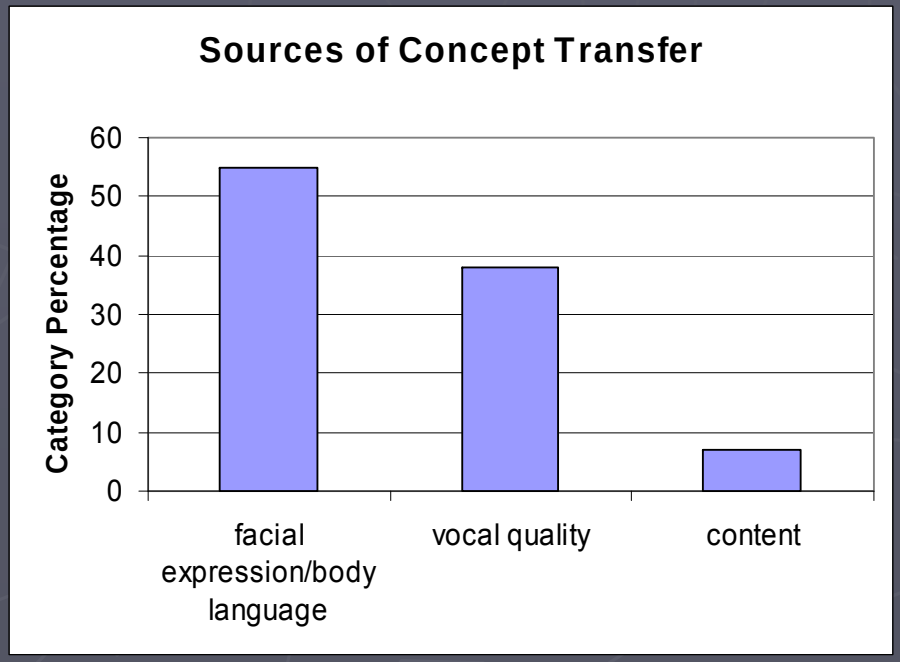
- In preparing materials, you need to:
  - Understand the main concepts (both in the papers and in background material)
  - Be able to explain the concepts to the audience
- Select some specific examples and graphics to use in making slides

Tips on Seminar Preparation - Media
Power Point Recommended

- Power Point
  - Most Common Method
  - Easier to Modify Slides
  - Better Visual Aides (especially for photographs)
  - Cheaper (if computer available)
  - Less “Down Time”

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 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
- Proofred slides –mistakees ar embarrassing
- BE Consistent about fonts **and** capitalization

Don’t have slides cluttered with text boxes in the wrong places

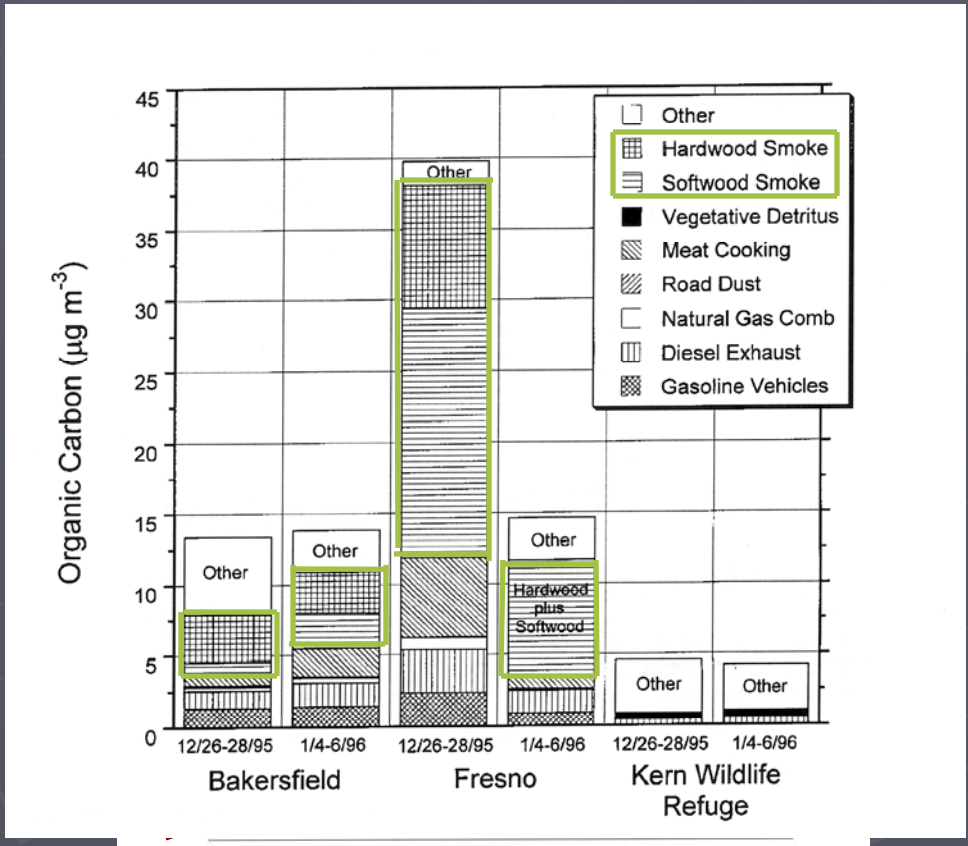
- Test animation sequence; don’t abuse animation features

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, 5(8), 344

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”