Seminar on Seminars

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- Managing & Coping
- Planning & Organization
- Slide Format
- Slide Content
- The Presentation

Caveats
- Do as I say, not as I do. This presentation, of necessity, is word-heavy and graphics-light.
- De gustibus non disputandum est. (There is no arguing about tastes.) These are my opinions. I could be wrong, but I’m not.
- Snepscheut’s Law: In theory, there is no difference between theory and practice. But in practice, there is.
- Monk’s Commentary: You’ll thank me later.

Managing and Coping
- Public speaking is a very scary experience for most students.
- The literature seminar is meant to be a (relatively) safe and secure environment for you to develop your presentation skills.
- This “Seminar on Seminars” should help you face both the big picture and the devil of the details.

Managing Stress
- Initiative vs. Finishitive: starting is hard, finishing is harder.
- Tricks for starting: do something, anything; just type, do your favorite part, futz with format, ...
- Distractions are tempting due to rate of change. We’re much more sensitive to slope than position; falling in love feels a lot better than being in love.
- Finishing. “An artist needs two assistants: one to help create, the other to stop him when he’s done.” – W. Churchill

Coping with Stress

The Human Tragedy
Graph #1: TANSTAFL

Managing Stress

Coping with Time
- “Time is Mother Nature’s way of keeping everything from happening all at once.” – W. Allen
- Stay focused: one thing at a time.
- “If it isn’t worth doing, it isn’t worth doing right!” – KSS
Managing Time

- Write it down and the list will remember for you.
- Complex jobs are done one bite at a time. Even 15 min. can get a bite done.
- Compartmentalize tasks: Set up a schedule with fixed times for each.
- Enjoy what you are doing! (well, mostly anyway…) Do the crappy jobs first thing and quickly.
- Last daily chore: 5 min. to plan tomorrow’s day.

Managing Knowledge

- “Knowledge is the small part of ignorance that we arrange and classify.” — Ambrose Bierce
- Knowledge is not memorization, it is organization.
- Knowledge is not the data, it is the structure that connects the data.

Planning & Organization

- Again: Always keep the audience in mind.
- Gear your talk at the right level. Better to aim just a little low than too high.
- Be kind to the old fogies. Eyesight declines significantly beyond 40. Use big text, high contrast. Rapid changes in light intensity are painful.

Planning the Talk

- What is the point of your seminar? It’s unlikely you’ll be able to make more than 1.
- Why will your audience be interested? Always keep the audience in mind.
- Where will the talk be held? What will impact your visual aids? Big room vs. small room, ambient light level …

Planning the Organization of the Talk

- You are telling a story. Tell it so they understand.
- Graphics & figures first, then words. Easier to organize your talk.
- Verbal comprehension is limited: Tell them what you are going to tell them, then tell them, then tell them what you told them.
Outlining the Plan

- YOU need a detailed outline of the talk, BUT your audience needs only a broad outline.
- Number of sub-divisions MUST be ≥2 and ≤5.
- Think about the logic of the flow.
- Slides for explicit division of sections are OK.

Title and Introduction

- Short titles are best: It’s a title, NOT an abstract!
- 1st slide: give the title, your name & brief outline.
- 2nd slide: set the background — Why should we care about this topic?

How Many Slides?

- It depends on your slides or overheads! Use low content slides and lots of them.
- Present only ONE main idea per slide.
- Most people plan on ~2 min/slide, but it depends on the slides:
  Can be as little as 1 min/slide for images.

Who and What Are Slides For?

- They are “visual aids” — human beings are visual not auditory creatures. We don’t retain verbal information very well compared to visual.
- Slides are BOTH for you and for your audience. These two uses are complementary, but different. You need less information than the audience.
- Prompts to yourself are often useful to trigger more detailed verbage.

KIS: Keep It Simple!

- A talk is NOT a full research paper.
- Your job is to convince and inform, NOT to archive.
- Present enough data to establish the point, NOT all the data possibly available.
- Simplify graphics when possible.
Type of Slides

- **Text Only:** usually bulleted or numbered.
- **Conceptual (cartoon):** use judiciously, be credible.
- **Graphs:** x-y and bar *strongly* preferred.
- **Tables:** usually better as graph; large tables (> 9 numbers) *NEVER* work.
- **Images:** micrographs, ORTEPS, spectra, etc. mid-quality jpg or png at <200 dpi is enough.

General Format

- Landscape format is standard.
- Use page effectively: Fill the page, but *don’t overfill.*
- Consider carefully your blank space. Use it to improve visibility and to separate topics, ideas, etc.
- The natural tendency is to cram things too close together so that they’ll fit in the space rather than to edit the text to the bare minimum needed; most people tend to be much too wordy and detailed, and to go on and on and on and on… when what they should do is just shut up!

General Format

- I like 1.2 line spacing with 0.8 after paragraph.
- Turn **OFF** WordWrap in Text Box. Manually break lines yourself (shift-enter). DON’T let Microsoft control line breaks!
- Avoid all Microsoft Design Templates! Keep logos (if any) simple and relevant.

Color

- Color should be used judiciously! Use vivid, readable colors with limited shades. Design artists are partial to pastels: I’m not.
- Use of **color** is very desirable for graphs, etc.
- Avoid overusing color for **MOST** text. Most effective when used for emphasis.

Titles should be 36 pt. Arial Bold
*Or 32 pt., but be consistent.*

- **Avoid serif fonts:** use Arial, Helvetica, Tahoma…
- **Major Divisions:** Arial, ~28 pt., bold.
  **Minor Divisions:** Arial, ~24 pt., bold usually best. Avoid text below 20 pt., generally, especially un-bolded. e.g., 16 pt.
- Leave extra line spacing between divisions.
- **CAPS ARE HARD TO READ FAST:** avoid them.
- **Spell-Check** your work!!
- Be consistent with punctuation at line ends.

Microsoft Overkill

- **Avoid over-use of bullets:**
  - Use **Solid and simple bullets. Never use – !!**
  - Use on major level only! Indent sets the gap.
  - DON’T get cute.
- **Don’t distract your audience from your content.**
- Avoid ‘clip-art’, especially the stupid Microsoft stuff.
**Direct Computer Projection**

- Now the default (even in Moscow!), but check.
- Bring your own computer (if you can). NEVER change from PC to Mac or vice versa.
- Avoid distracting backgrounds. Clear, unshaded backgrounds usually best.
- Be careful with big images (use jpg or png not tiff) 200 dpi is usually more than enough.
- Use animation sparingly: DON’T overuse it.
- DON’T get cute.

**Chemistry: 2000**

- Analytical
- Inorganic
- Materials
- Nanosci
- Physical
- Organo
- Met
- Bio
- Org
- Molecular
- Biology
- Biochem
- Chem
- Engine

**Suslick’s Rule of Fist**

- You’re always too close to the computer monitor. This makes for a strong tendency to over-stuff slides. Much better to have less per slide and more slides.
- Get far enough away from the screen so that, with your arm fully extended, your fist blocks the whole slide.
- Slides legible at that distance will be visible even at back of the hall.

*or make the magnification small enough: ~33%

**Keywords**

- Use minimal number of words in slides.
- DON’T type long, complete sentences. Avoid “read along with the bouncing ball…”
- Use keywords, shortened text.
- Make it easy to read: One idea per line.
- Don’t break idea or phrase at end of the line.

**Type of Graphs and Tables**

- ALWAYS label axes! ALWAYS show units!
- KEEP IT SIMPLE: 3-D graphs usually don’t work well. Avoid novel graph forms.
- USE STRONG COLORS. Avoid complex hatch markings.
**Format of Graphs**

- TURN OFF autoscale. Fill slide well; use empty space cleverly.
- Add a conclusions statement below: *Give the Bottom Line.*

**Micrographs Can Project Well.**

- Give information with image:
  
  **Sonication of Fe(CO)$_5$**
  
  in C$_{16}$H$_{34}$, under Ar, 25°C, 20 KHz, 80 W

- ALWAYS provide size scale.

- For projected image, medium quality jpeg or png at 200 dpi (unless original is very small).

**Conceptual (Cartoon) Slides**

- Non-Fullerene Nano-Tubes
  
  - 1. Assembly
  - 2. Crosslinking
  
  Columnar hexagonal liquid crystalline phase as template
  
  Hollow nanotubes or membranes with monodispersed 1.5 nm pores, 100 nm to 1 mm long

  Be careful to back up cartoons with real data.

**Spectra & Raw Data**

- Spectroscopic data can provide credibility.
  
  Spectra must be well labeled (remember units!). Label important assignments. Highlight with color. Provide chemical structure with spectrum.

  **BE SURE** your spectrum means what you say it does!

- ORTEPs vs. computer models.
  
  Designate x-ray structures vs. computer models as such. Give the chemical structure or formula.

- Don’t overdo it.
  
  Too many spectra will obscure the big issues.
Jargon & Abbreviations

- Avoid jargon – you’ll lose your audience.
- Use rational abbreviations, sparingly. Watch out for TLA’s (**three letter acronyms**).
- If there are lots of abbreviations, use a separate slide for them. Consider using a second (overhead) projector or even a separate handout.

Equations

- Keep them simple. Remember your goal is to convince, not ‘prove’. Proofs belong in the written work, not a presentation. Only show the important equations, limit the details.
- Define all symbols. Keep your audience’s ignorance foremost in mind!
- Make the equations big enough. Sub- and superscripts are often too small.

References

- If you use someone else’s data or figure, you **MUST** provide the citation.*
- It’s always nice to point your audience to lead references, especially if they are yours.
- Don’t cluster references on a single slide. Give them one or two per slide when relevant, so the audience can jot them down.

*16 point at the bottom of the slide is OK, 18 point or 20 point is better.

Humoresque

Cover your ass: always be politically correct. (Well, almost always.)

Current State of Our Two – Party System

Humor

- Be very, very careful. Many scientists are badly humor impaired. (A defect **not** covered by the American Disabilities Act.)
- Visual humor often best, especially for an international audience.
- Rank has its privileges: The more senior you are, the more you can get away with. (i.e., the boss’s jokes always get more laughs.)

Humor

Make sure it’s appropriate for the occasion.
The Presentation

How Long?

- Practice talks are always slower than real presentations: adrenaline rush!
- DON'T go more than 50 min.
  (After 55 min., your audience stops listening and starts wondering if they can catch their bus and if their bladders will hold out.)
- At meetings, KEEP to the schedule!
  Don’t worry if your audience leaves — worry when they start coming at you!

Practice Talks

- “Be prepared.” It’s hard to practice too much.
- Your goal is to communicate naturally. Stream of consciousness doesn’t work. A written script won’t work, either – too boring.
- Get some friends to hear the talk, AFTER you’ve already practiced a little bit.
- Listen to their feedback. Don’t be defensive. If they’re confused, so will your real audience.
- Watch out for “um”, “O.K.”, “you know”, and other distracting habits.

Pointers for Pointers

- Bring your own laser pointer.
- Always carry an extra set of batteries. Tygon tube connector prevents shorts.
- Green is great. Red ok if 640 nm, NOT 670 nm.
- DON’T keep the laser on all the time. Push the button ONLY sparingly!
- DON’T get the shakes. Use two hands if needed.

The Room

- Know your room in advance.
- Figure out the best lighting BEFORE the talk!
- Think about where to stand. Don’t block out screen from audience. Best to be in the open, away from podium.
- With transparencies, point at the screen, NOT the overhead! Audience looks where you do.

The Presentation

- Slow down!
- Modulate the voice: don’t drone in MONOTONE.
- Keep eye contact with all of audience.
- Don’t try to impress, try to INFORM. An informed audience will BE impressed. Audiences can smell bullshit or condescension.
- Relax and be modestly confident. Remember: You know more than they do about your talk.
- Show enthusiasm — it’s contagious!
The Conclusions Slide

- Verbal comprehension is limited:
  The Conclusions Slide should tell them what you told them.
- Present only the TAKE-HOME messages:
  i.e., what should they remember in 1 month.
- Keywords, NOT long sentences.

Q and A

- “Don’t be nervous, don’t be frightened, don’t be scared:
  be prepared.” — T. Lehrer.
- Don’t be defensive!
- Make your answers as short and to the point as you can.

Q and A: Managing Ignorance

- If you don’t understand a question, just say so, and ask for rephrasing.
- “I was gratified to be able to answer promptly. I said I didn’t know.” — Mark Twain
- We are all mostly ignorant of that which is already known, and totally ignorant of that which isn’t yet known.

Acknowledgments and Ending

- Note American spelling of “acknowledgments”.
- Make it brief and to the point.
- Let the audience know when you are done.
- Best closing line:
  “And finally, I’d like to thank you for your very kind attention.”
- (Then, shut up and wait for the applause!)