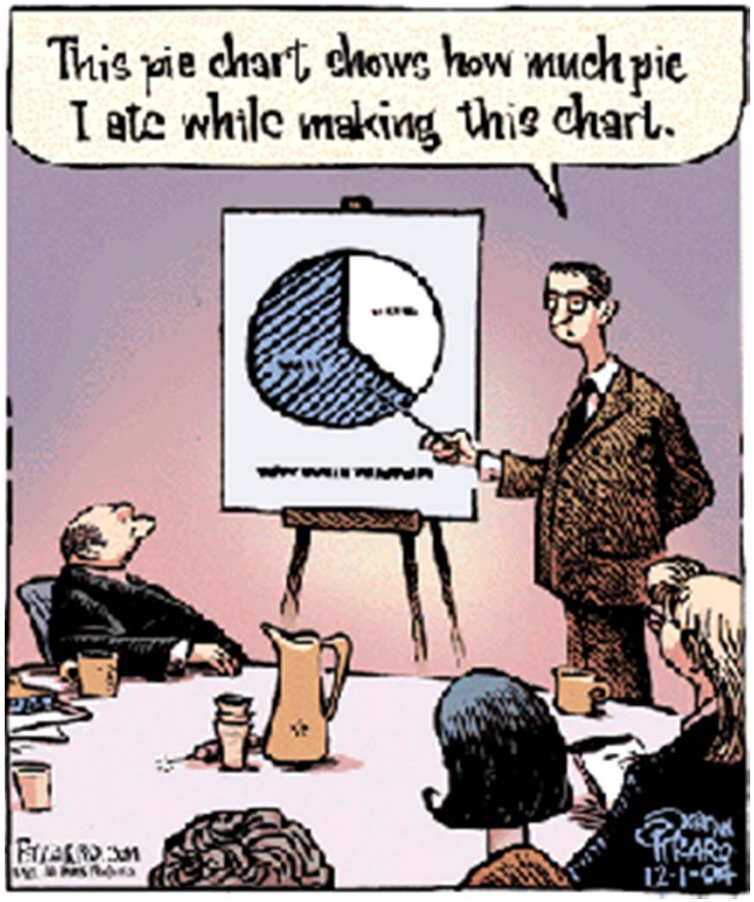
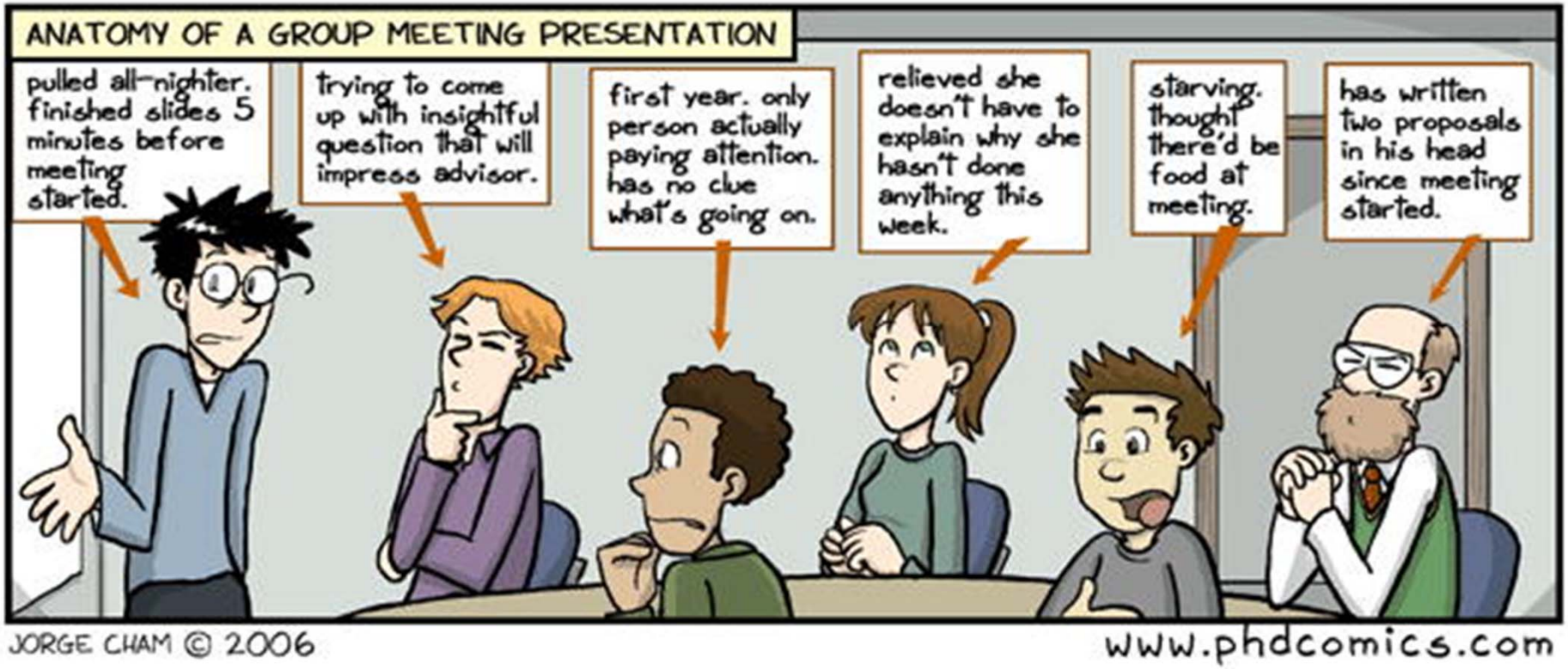
Organizing a ~30-minute prelim/final talk



The Oral Presentation for the Prelim or Thesis



How Do You Start Drafting Your Presentation?

First, draft an outline for your presentation!!

Example organization of ~30-minute prelim talk

Background and Introduction (7–9 minutes)

$\Rightarrow$ 5–6 slides

~1 Title slide - Your name, advisor's name, research title
~1 Outline slide – Organization of talk
~1 Overview slide – Why is this research important?
~2-3 Background slides – Provides essential background for non-experts

Methods and Preliminary Results (7–9 minutes)

$\Rightarrow$ 5–6 slides

~2-3 Methods slides – Theoretical/experimental methods used
~0-3 Preliminary results slides – Proof-of-principle results

Example organization of ~30-minute prelim talk

Proposed Research (10–12 minutes)

$\Rightarrow$ 5–6 slides

~1-2 slides per proposed project

Summary and Acknowledgments (1-2 minutes)

$\Rightarrow$ 2 slides

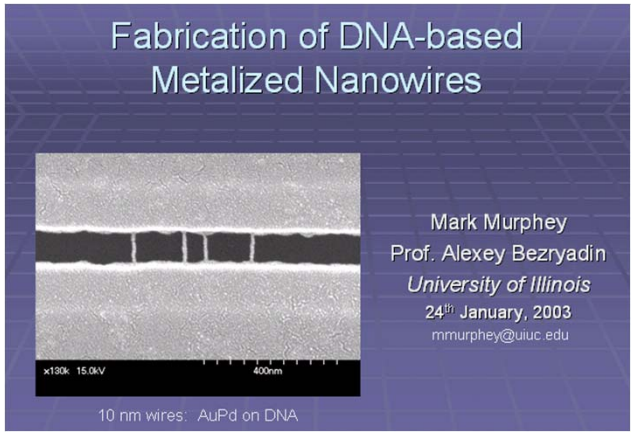
1 Summary slide - Review the main points

1 Acknowledgment slide – Acknowledge collaborators, funding agencies, helpful colleagues/staff, etc.

Questions

$\Rightarrow$ 3–N back-up slides – Anticipate questions that might arise

The title slide and outline prepares the audience to listen and shows organization of talk

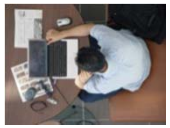


Title slide

- Your name and affiliation
- Your advisor
- Venue and date
- Attention-getting graphic

Outline or overview of presentation

- Prepares the audience to listen
- Provides a logical structure for your talk
- Provides motivation and context
- Summarizes key points (limit to two or three for a ~30-minute talk)



The “body” of your presentation is the intellectual content of your talk

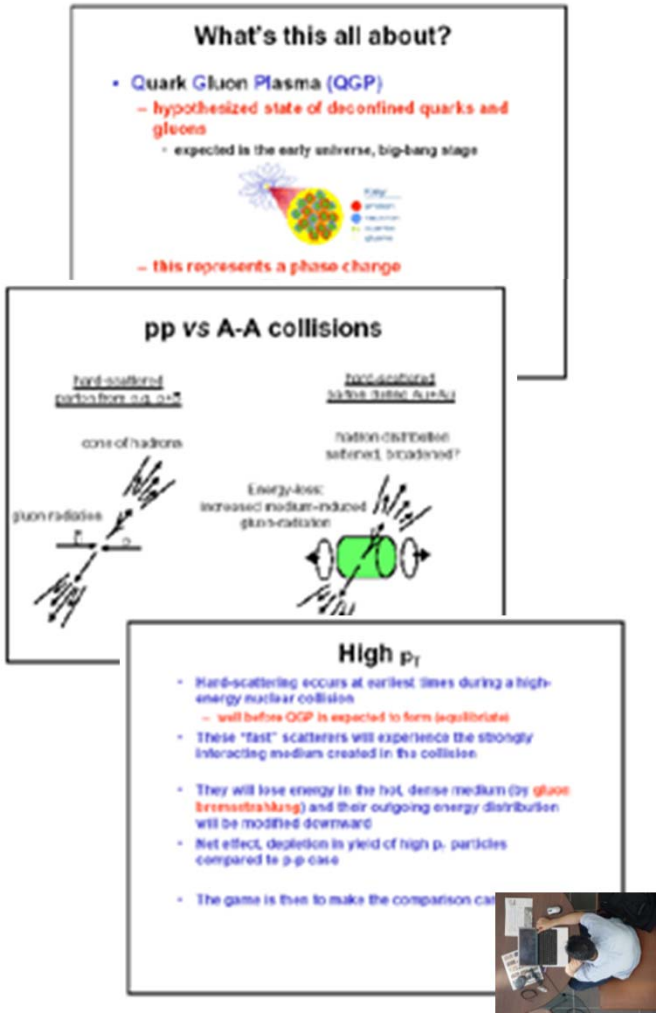
Problem statement, motivation

Previous work, essential background info

Methods

Results and Discussion

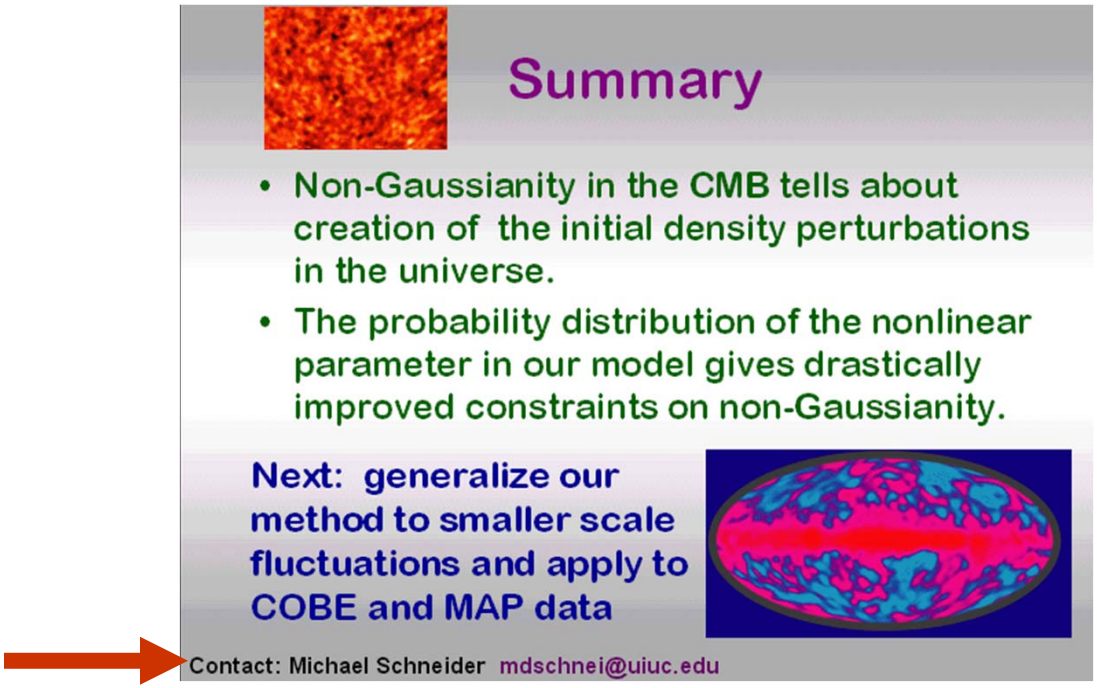
Proposed work (prelim)



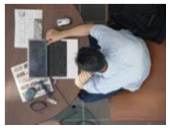
Provide a “summary” slide

Recap key preliminary results

Reiterate proposed projects



This slide will probably stay on the screen during the question period and will thus get the longest audience exposure—make it count!

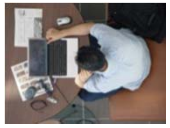


Tips for preparing your talk

Adjust the presentation to your audience! Your committee are not all experts…make sure you have sufficient background to orient all members

You don't have to tell the committee everything about your research: Identify the 2-3 main points you can reasonably convey in a 30-minute talk

Create an outline of your talk, i.e., have a logical organization: You can use the same outline as used for your prelim paper



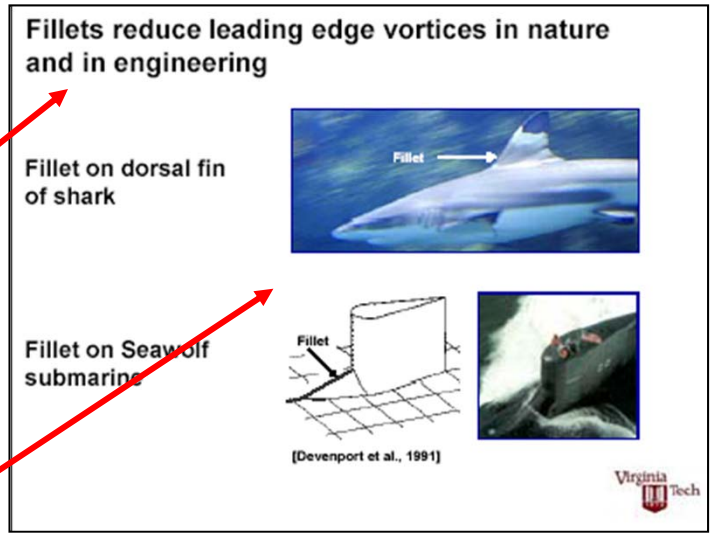
Tips for preparing your talk (cont.)

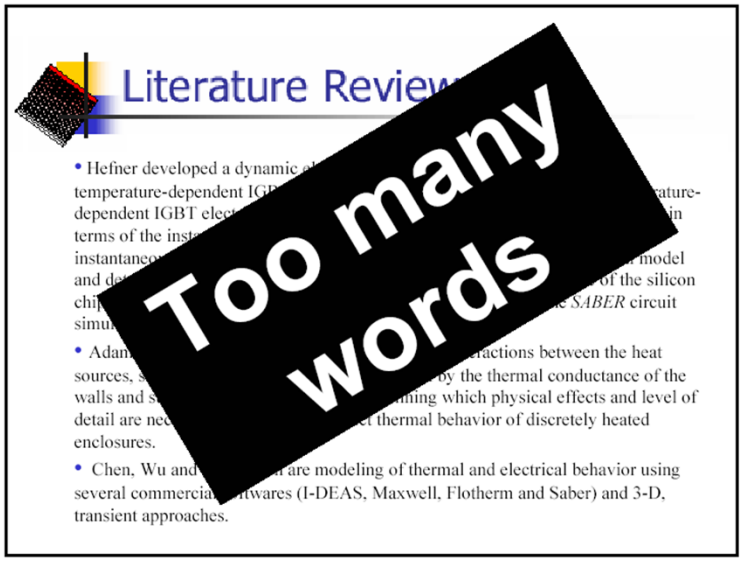
Have only 1 idea per slide

Use the header to state the main idea of the slide, and use the body of the slide to support that idea

Use well-labeled graphs and figures to illustrate your key points…this makes the slide more real and interesting to the audience

Avoid too much text….





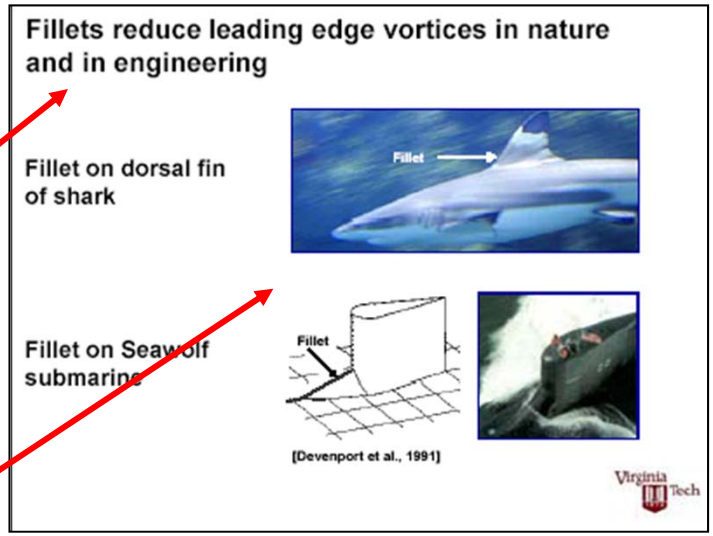
Tips for preparing your talk (cont.)

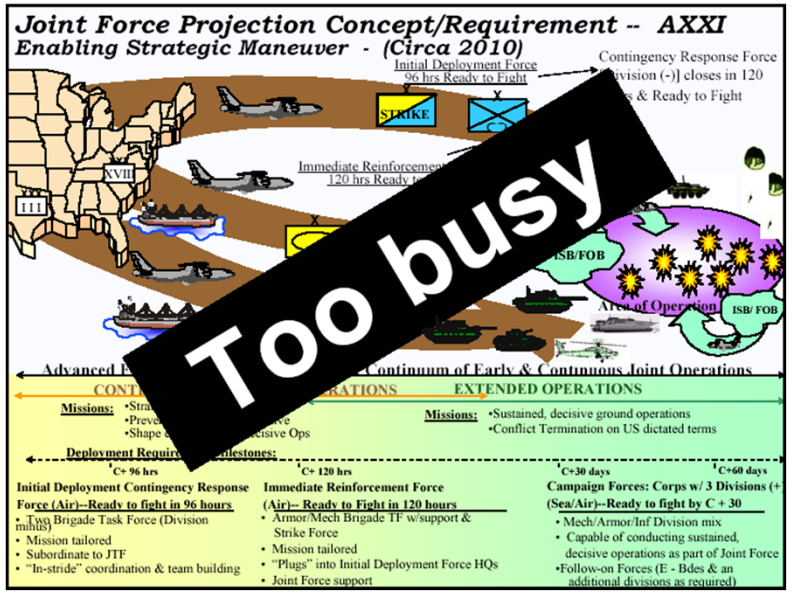
Have only 1 idea per slide

Use the header to state the main idea of the slide, and use the body of the slide to support that idea

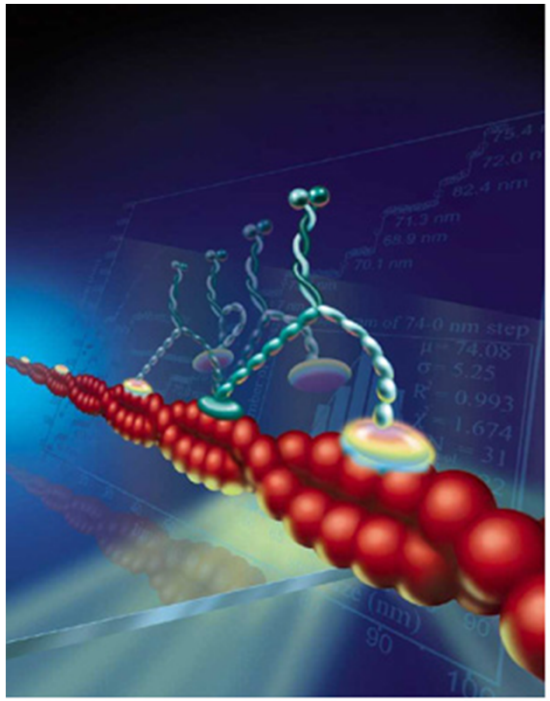
Use well-labeled graphs and figures to illustrate your key points…this makes the slide more real and interesting to the audience

….or too many distracting images





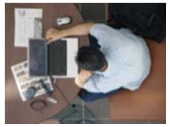
Use figures to illustrate your key points



Myosin “walking” on actin
Courtesy of P. Selvin

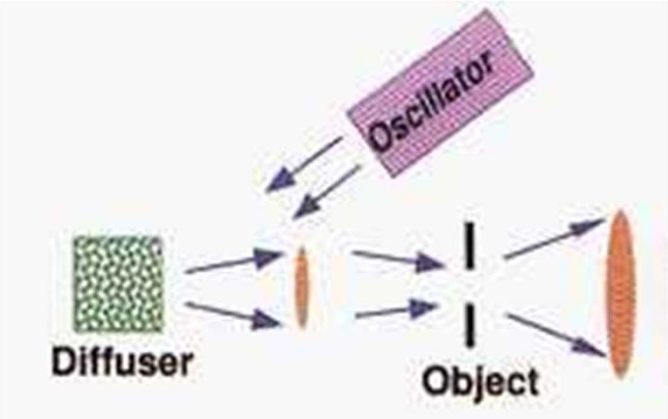
Figures:

- enliven slides
- promote audience interest
- provide supporting evidence for key points
- help explain complex ideas and relationships quickly
- show how things work, etc.

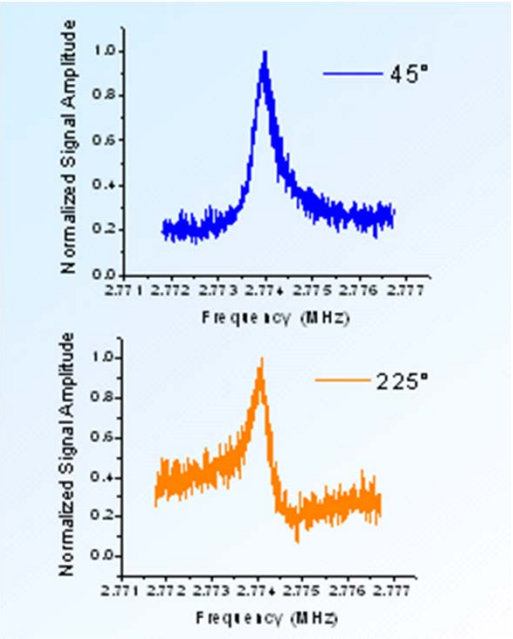


Label all elements in a figure

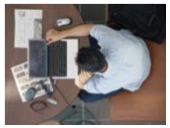
- Point out important features
- Label both axes of graphs and show units
- Provide a brief caption
- Give credit to source



The Nike laser system uses discharge pre-amplifiers.
(*Courtesy US Navy*)

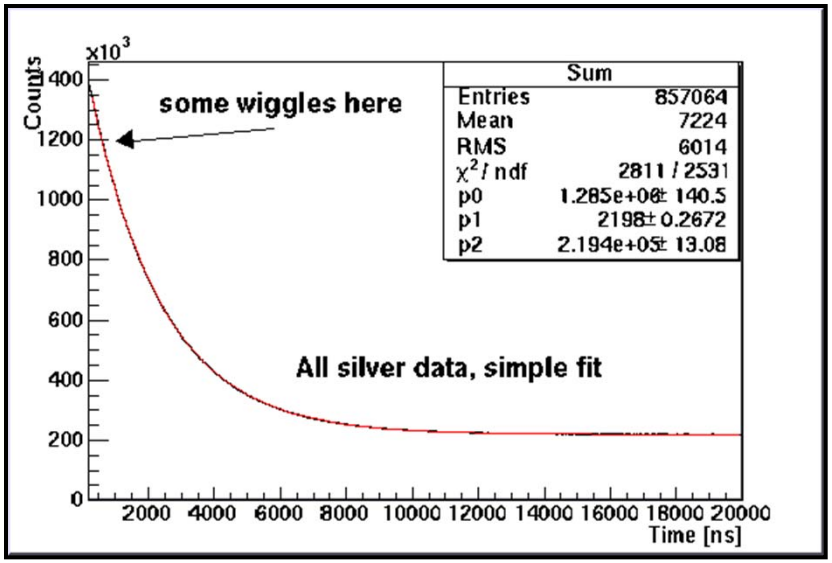


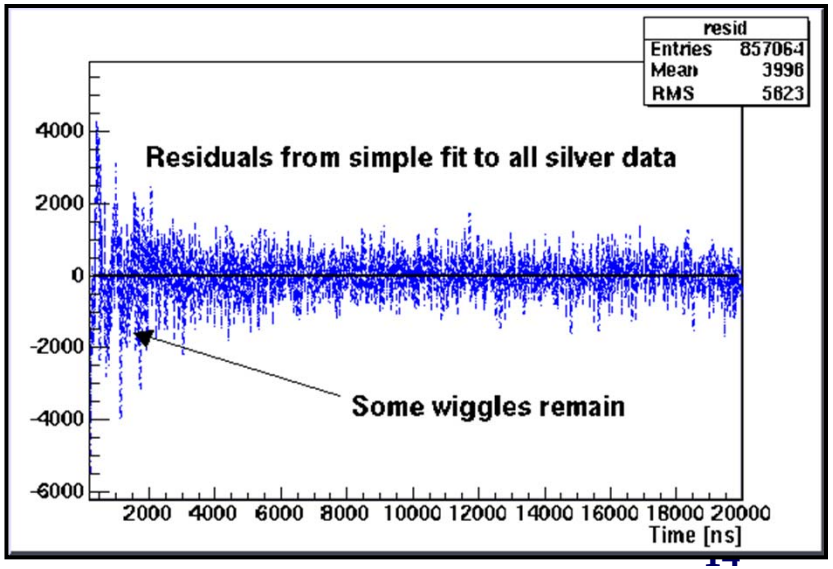
Sample normalized signals from the two-beam optical drive.
(*Courtesy C. Michael*)



Presenting data is your most important and challenging task

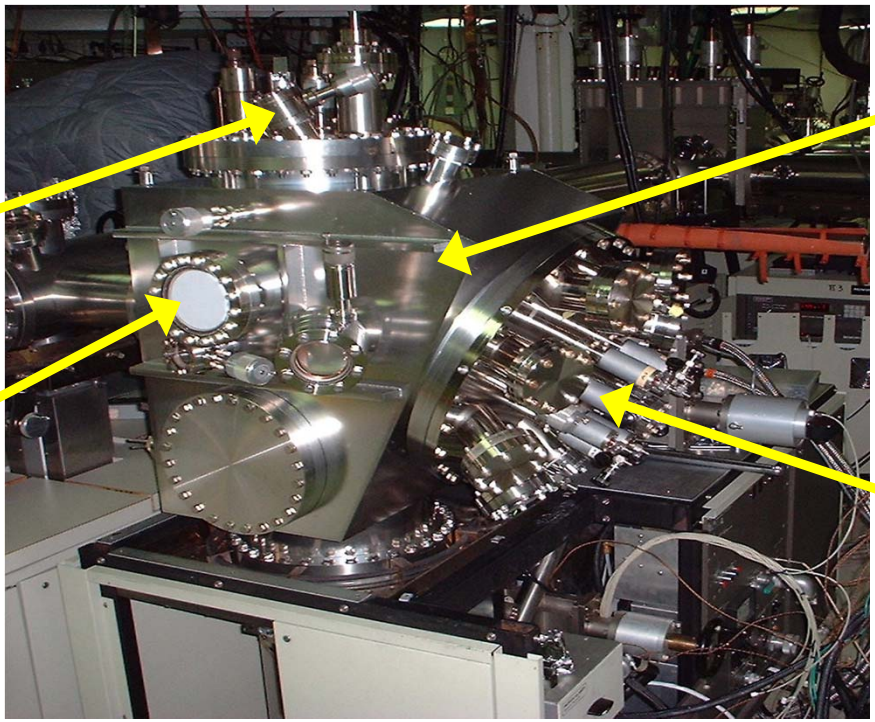
- Avoid copying a graph from a formal article – they have a different style, **e.g., labels are too small**
- Use color and make lines thick, labels legible
- Label axes and annotate important points with arrows and add words
- Use tables sparingly – if used highlight important parts





Show the equipment IF it helps as part of your proof – but sparingly, not just because you love it

- **Photographs** give scale and reality – but add labels
- **Schematics** provide concept
- **Diagrams** strip away unnecessary details
- **ALL OF THESE** can be useful in combination

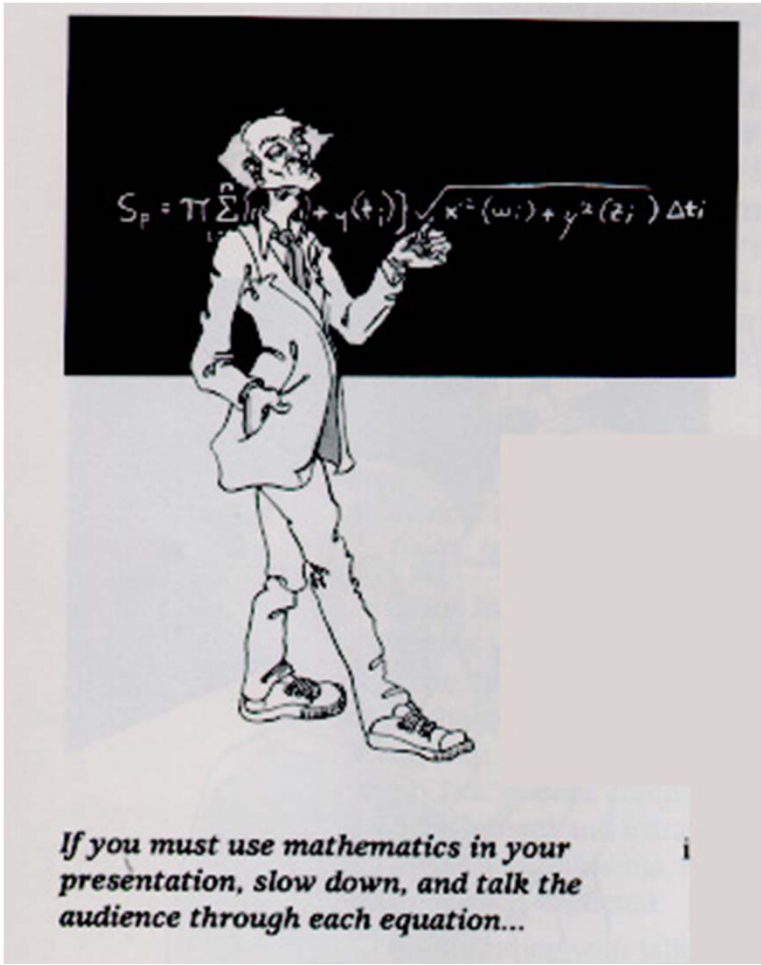


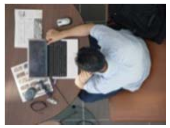
Use equations sparingly

Use equations only when necessary

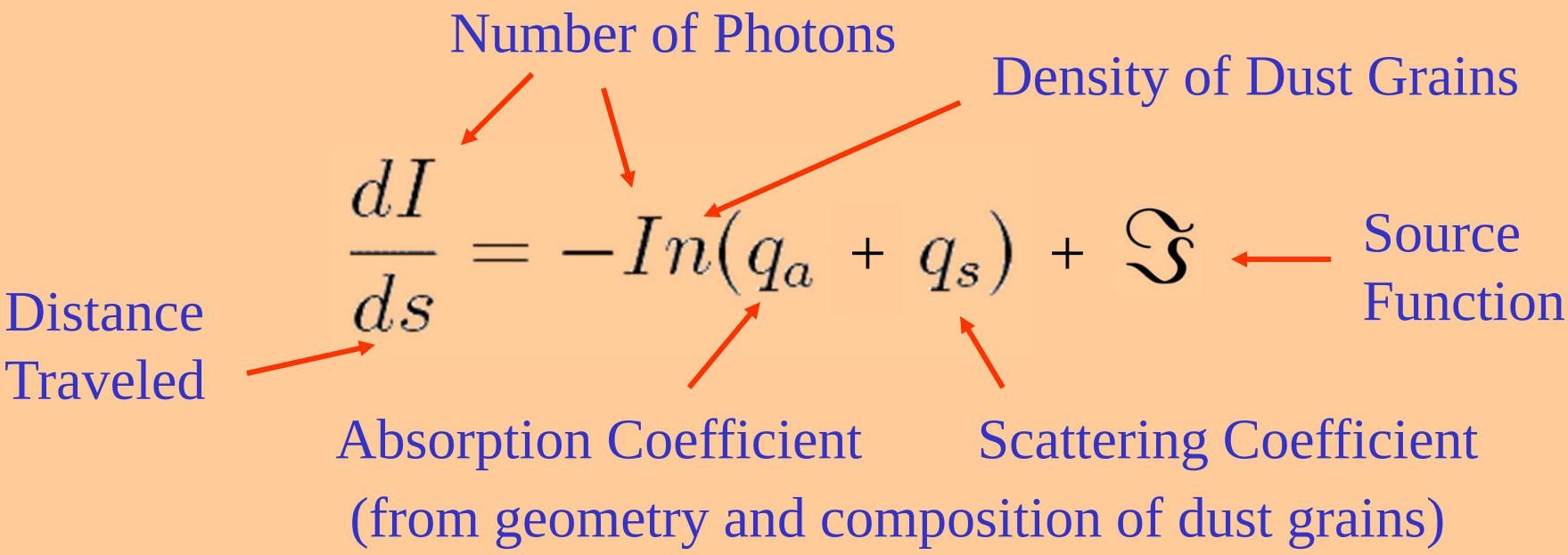
If you use equations

- Slow down
- Talk through step by step
- Explain relevance
- Combine with a picture that illustrates the physical principle involved





The Radiative Transfer Equation



Requirements to solve analytically:

- *n* is a constant
- $q_a = 0$ *or* $q_s = 0$

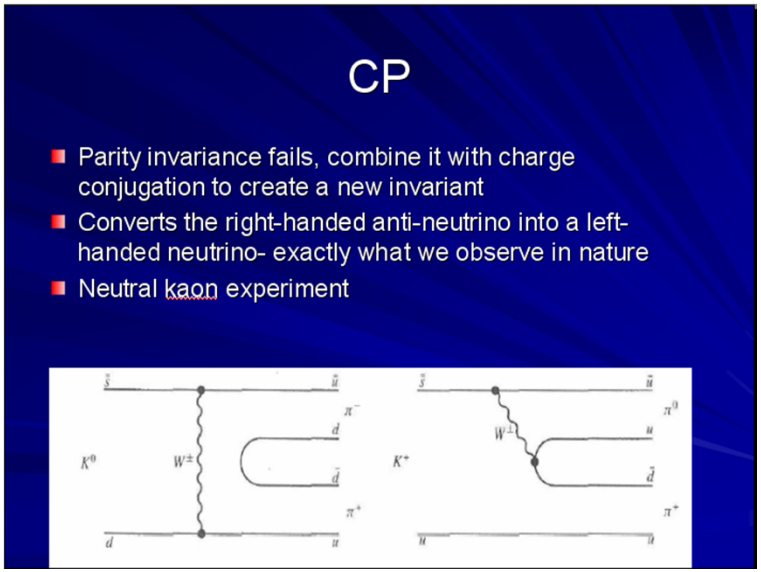
We want turbulent clouds. *n* is not a constant

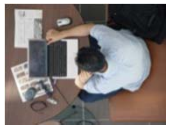
Remember, your goal is to convey your ideas, so avoid distracting text and effects!

Don’t overuse PowerPoint animations and sounds!

Make sure there is good contrast between text and background

Use simple (or no) backgrounds on slides





Eschew weird fonts

Don't use *calligraphy* or serif fonts

USE THE SAME FONT THROUGHOUT THE TALK

Make all text at least 20 pt

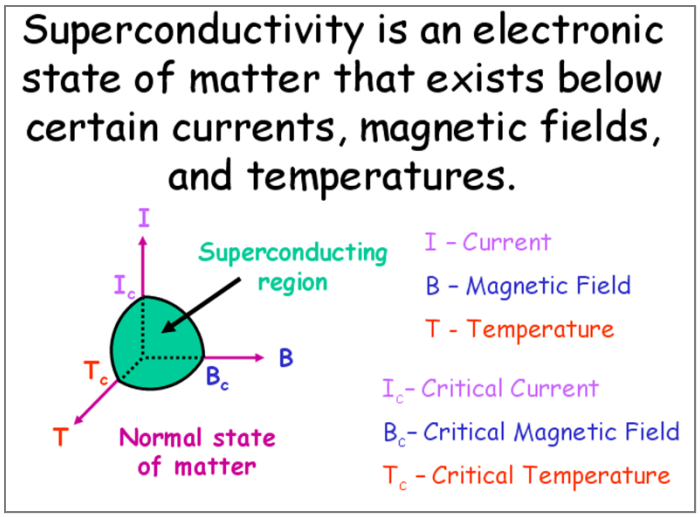
Use “normal” colors

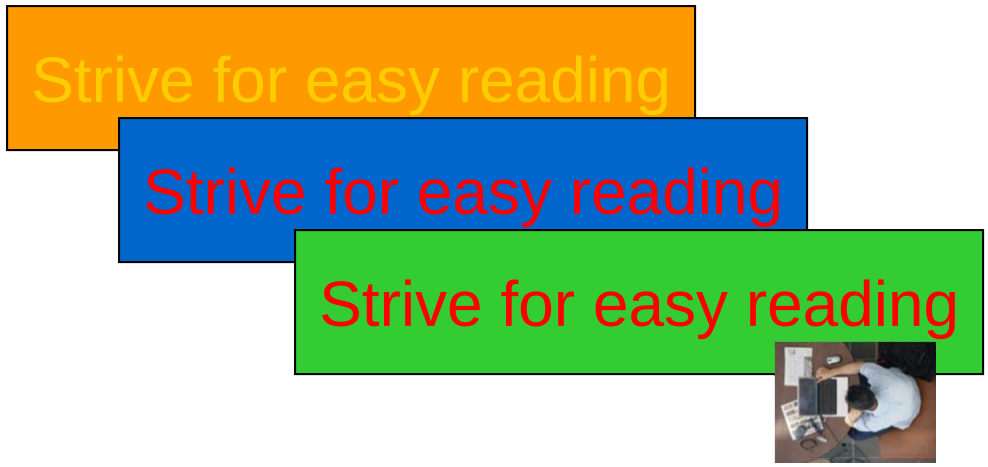
DON’T use red/green or red/blue as contrasting colors

Make sure colors looks the way you expect using an LCD projector!

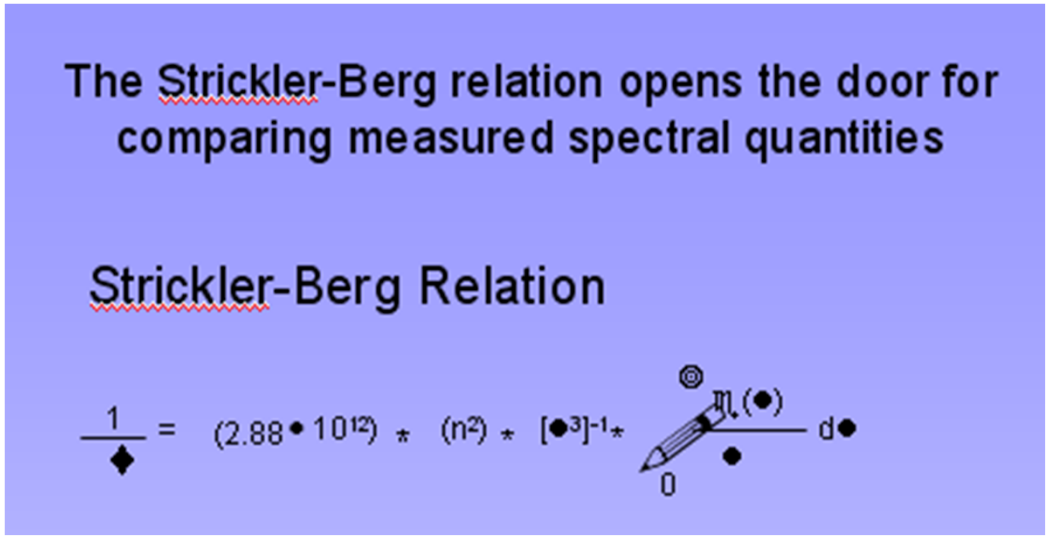
Avoid neon colors and pastels

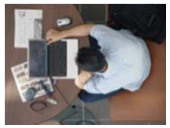
Don’t use many random colors; people expect color to *mean* something



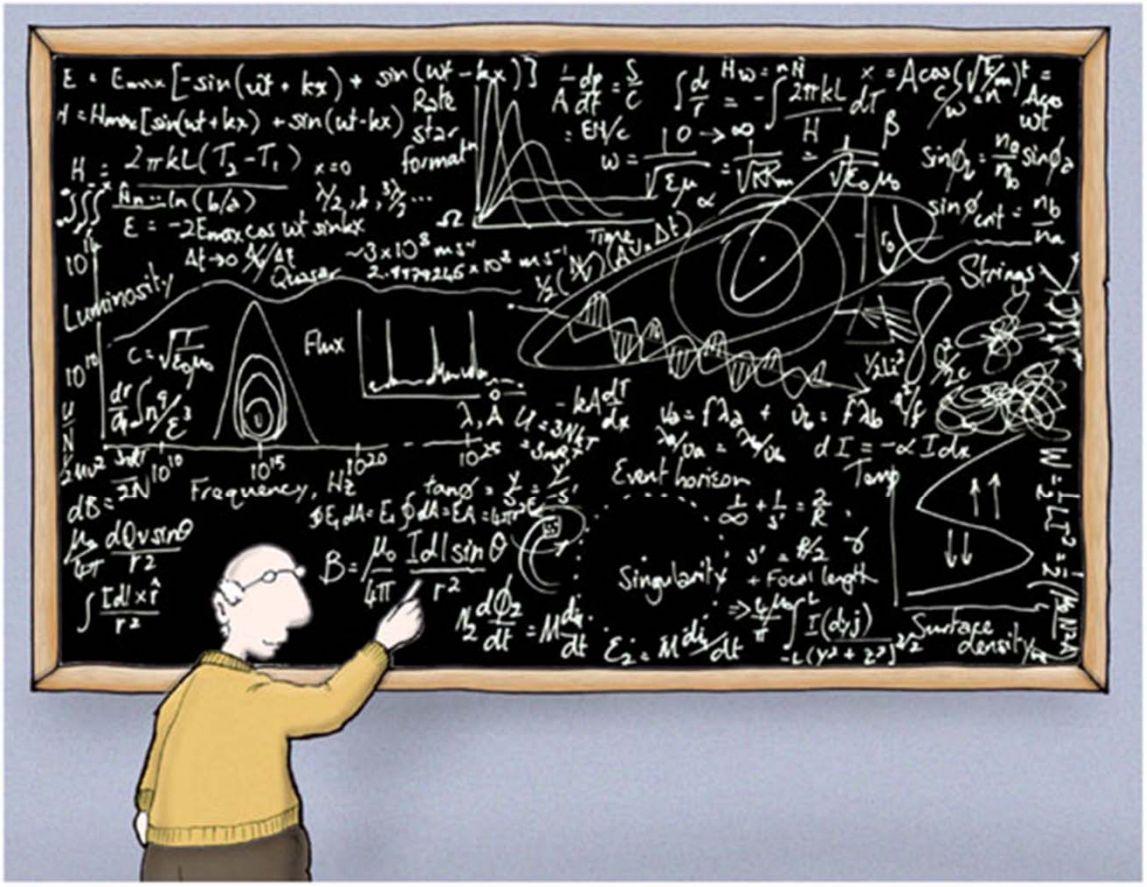


“Embed” special fonts in PPT

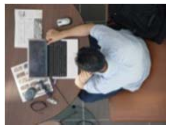


(1). Open the document in PowerPoint
(2). Click on the "Tools" tab on the top menu
(3). Click on the "Options" link
(4). Click on the "Save" tab
(5). Locate “Font options for current document only” and “Embed TrueType fonts”
(6). Click in the check box to turn on the option 

Tips for presenting you prelim/final talk



Astrophysics made simple



Pointers for giving the best possible talk:

Maintain eye contact with audience
- Don't stare at screen or monitor

Do not read your talk!

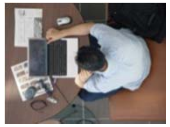
Avoid nervous mannerisms
- Pacing, bobbing, waving arms, jingling coins

Use laser pointer or stick directed at screen
- Don't point directly at overhead on projector
- Don't block the screen

Train yourself to speak slowly and distinctly—practice!

Avoid "fillers": "uh", "like", "um", "okay"

Be enthusiastic!
- If you don't act excited by your results, don't expect the audience to be!

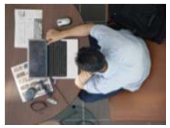


Pointers for giving the best possible talk:

Don’t show any material on slides (e.g., figures, equations, text, etc.) you can’t explain!! This will invite questions you don’t want!!

Rehearse how you’ll end your talk

- Don’t end with “Well, I guess that’s it…”
- Don’t just stop and let the committee guess that you’re done
- Thank the audience!



The best way to prepare for a talk is to Know Your Material

Practice, practice, practice

Focus on communicating, not performing

Humor is good, but don't overdo it

Keep explanations simple

Prepare key phrases and words

It's okay to write out material first

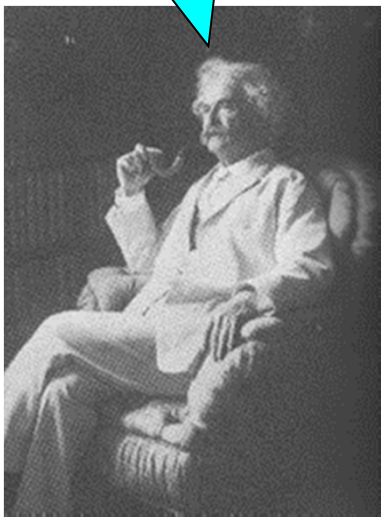
Write the key point to make for each slide

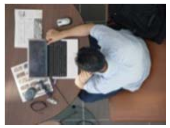
If the slide doesn't have a point, eliminate it!!!

Stay on track

Small (planned) digressions fine if motivated, but get back on track (shows you are paying attention to audience)

It takes three weeks to prepare a good ad-lib speech





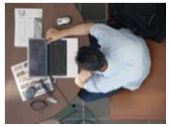
More advice…

Bring a copy of your slides if giving a PowerPoint talk

- this will help you practice
- you can distribute these to interested people

Make appropriate use of the screen:

don’t underfill the screen, and don’t put key information at the edges of the screen.



Rehearse Your Talk!

A few days before

- Practice in front of friends and check timing
- Rehearse likely questions
- Solicit feedback about logic and clarity
- Revise (*shorten*)

The night before

- Go over one more time
- Put all materials *in order* (number your slides!)

Prof. Per Ahlberg delivering the Presentation Speech for the 2001 Nobel Prize in Chemistry at the Stockholm Concert Hall.

Check *everything* just before your talk

Check the projector

- Make sure you know how to turn it on
- See that it is plugged in
- Check which way to position your slides
- Adjust the focus

Check microphones, pointer, other tools

Arrange your slides, notes, and other materials

- Be able to reach everything without moving
- Be able to go through your slides without fumbling

Have a "clock" handy to check the time

Express your thanks

At the beginning of your talk

Acknowledge colleagues and collaborators who contributed to the work, your advisor, sources of funding

At the end of the talk

Thank your committee for their attention