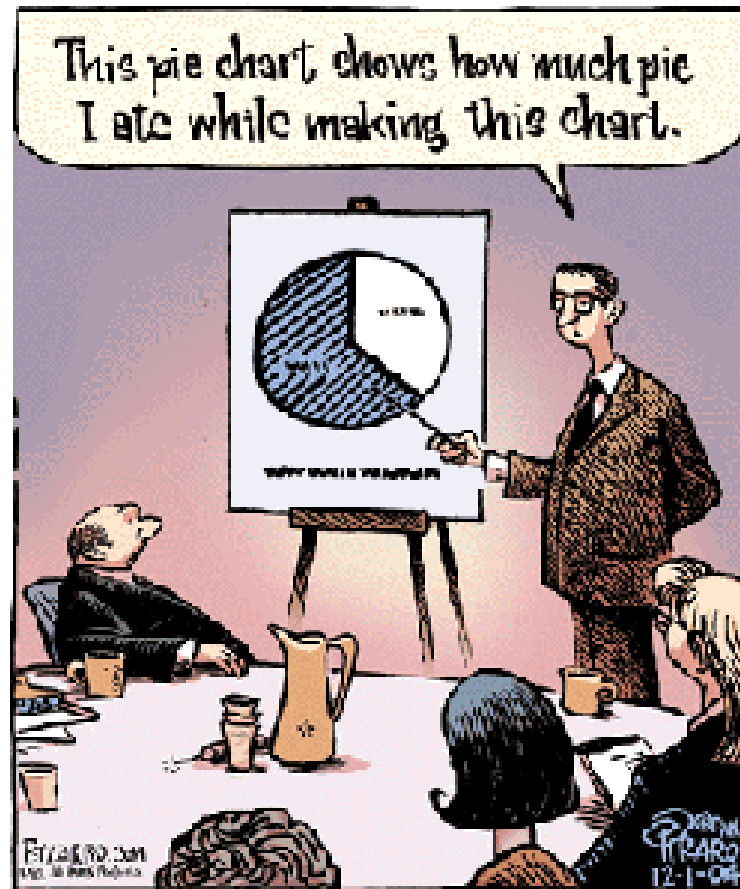


# Organizing a ~30-minute prelim/final talk



# The Oral Presentation for the Prelim or Thesis



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[www.phdcomics.com](http://www.phdcomics.com)

# 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)

⇒ 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)

⇒ 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)

⇒ 5–6 slides

~1-2 slides per proposed project

## Summary and Acknowledgments (1-2 minutes)

⇒ 2 slides

1 Summary slide - Review the main points

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

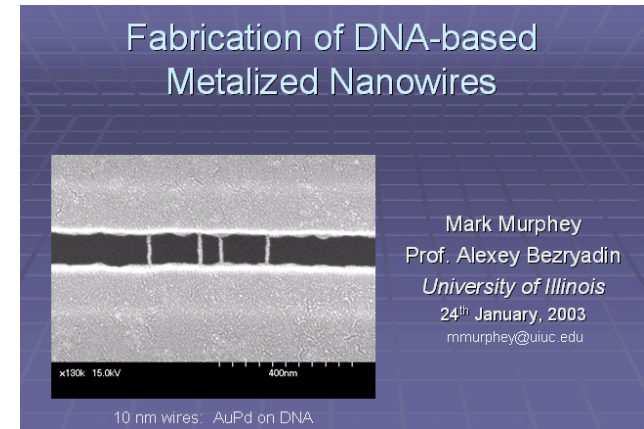
## Questions

⇒ 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

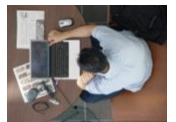
## Title slide

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)

What's this all about?

- Quark Gluon Plasma (QGP)
  - hypothesized state of deconfined quarks and gluons
  - expected in the early universe, big-bang stage



– this represents a phase change

Legend:  
• quark  
• gluon  
• quark gluon

pp vs A-A collisions

hard scattered  
particles from p-p, p-A


cone of hadrons

gluon radiation

hard scattered  
in the initial A-A

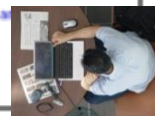
nucleon distribution  
saturated, broadened?

Energy-loss:  
increased medium-induced  
gluon radiation



High  $p_T$

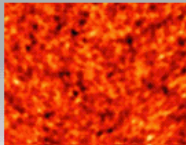
- Hard-scattering occurs at earliest times during a high-energy nuclear collision
  - well before QGP is expected to form (equilibrate)
- These “fast” scatterers will experience the strongly interacting medium created in the collision
- They will lose energy in the hot, dense medium (by *gluon bremsstrahlung*) and their outgoing energy distribution will be modified downward
- Net effect, depletion in yield of high  $p_T$  particles compared to p-p case
- The game is then to make the comparison case



# Provide a “summary” slide

Recap key preliminary results

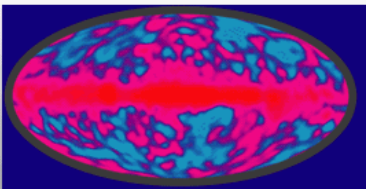
Reiterate proposed projects



## Summary

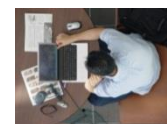
- Non-Gaussianity in the CMB tells about creation of the initial density perturbations in the universe.
- The probability distribution of the nonlinear parameter in our model gives drastically improved constraints on non-Gaussianity.

Next: generalize our method to smaller scale fluctuations and apply to COBE and MAP data



Contact: Michael Schneider [mdschnei@uiuc.edu](mailto:mdschnei@uiuc.edu)

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



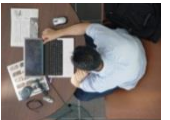


# Tips for preparing your talk

**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



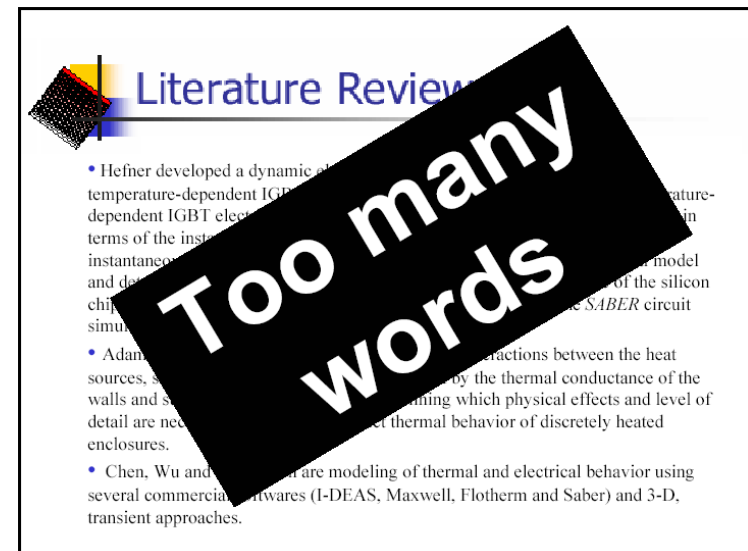
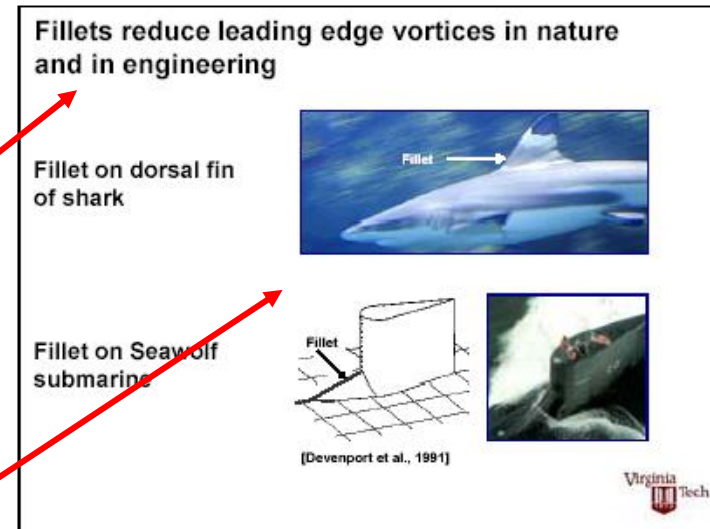
# Tips for preparing your talk (cont.)

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....



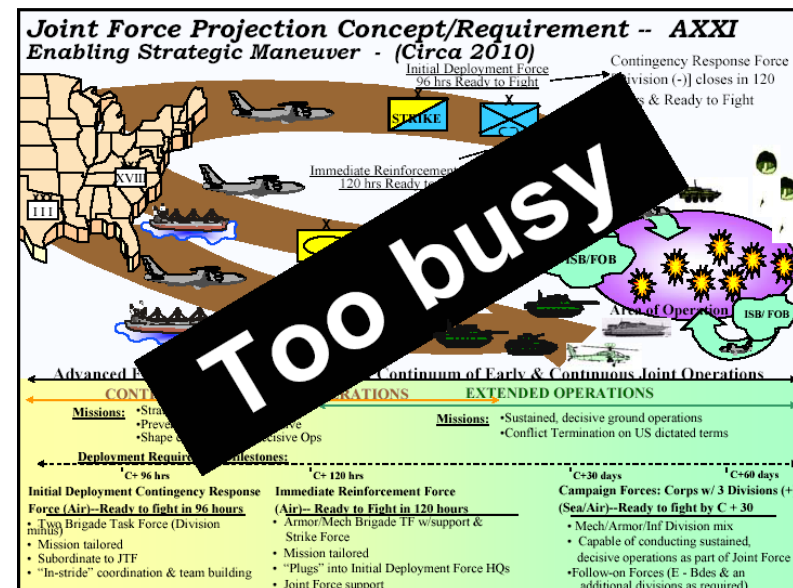
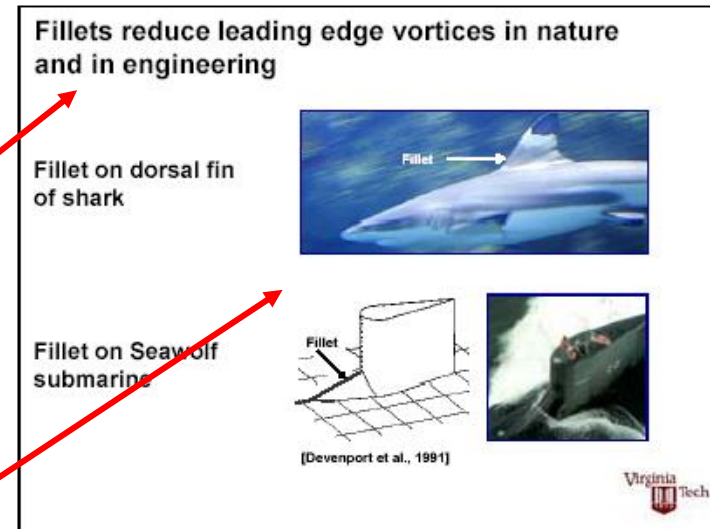
# Tips for preparing your talk (cont.)

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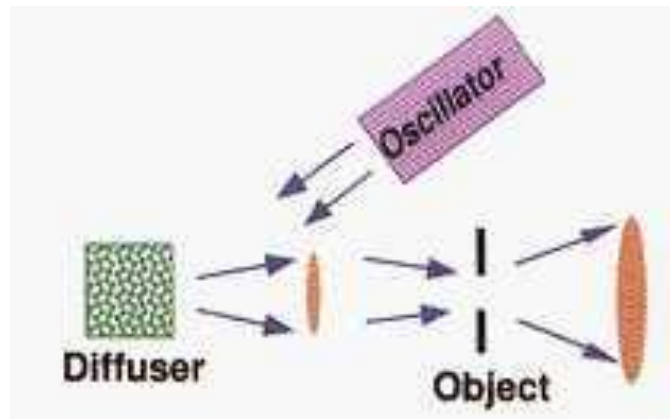
Use well-labeled graphs and figures to illustrate your key points...this makes the slide more real and interesting to the audience

....or too many distracting images

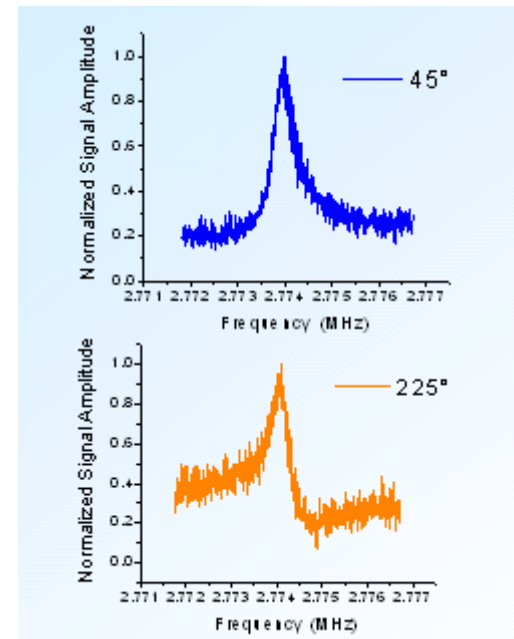


# Label all elements in a figure

- 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)

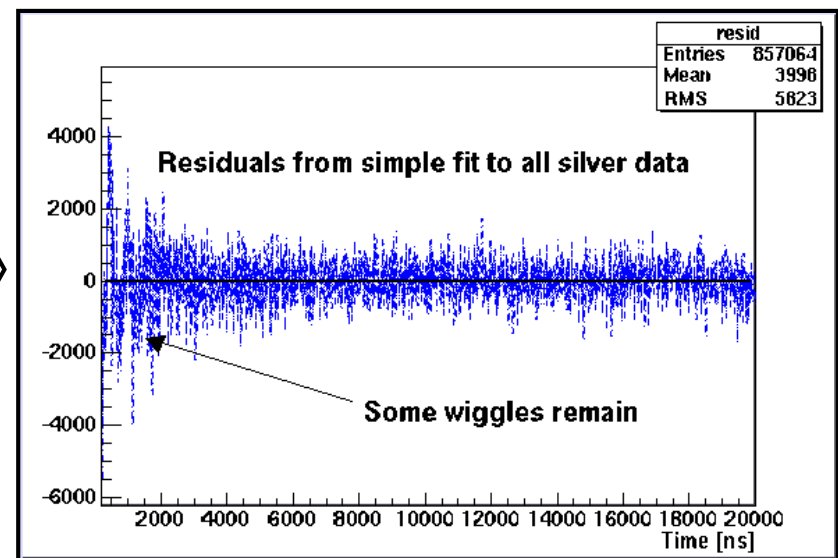
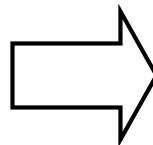
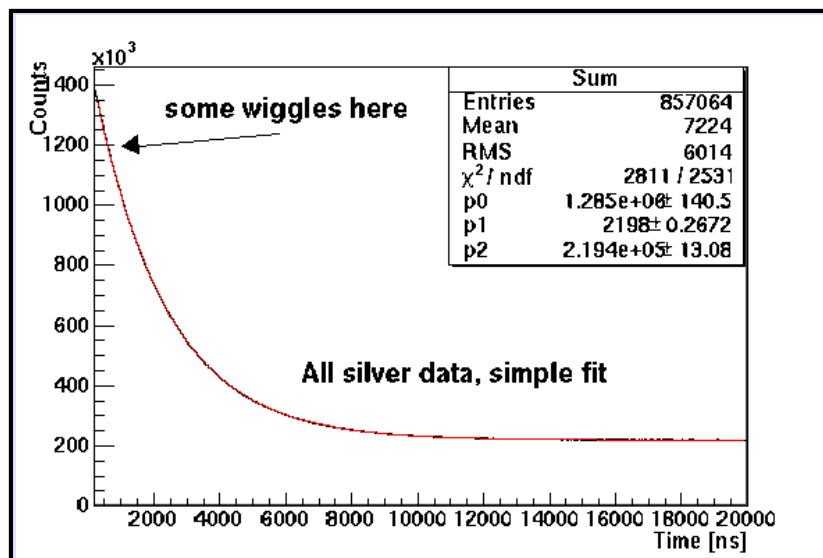


Sample normalized  
signals from the two-  
beam optical drive.  
(Courtesy C. Michael)



# 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



# Use equations sparingly

Use equations only when necessary

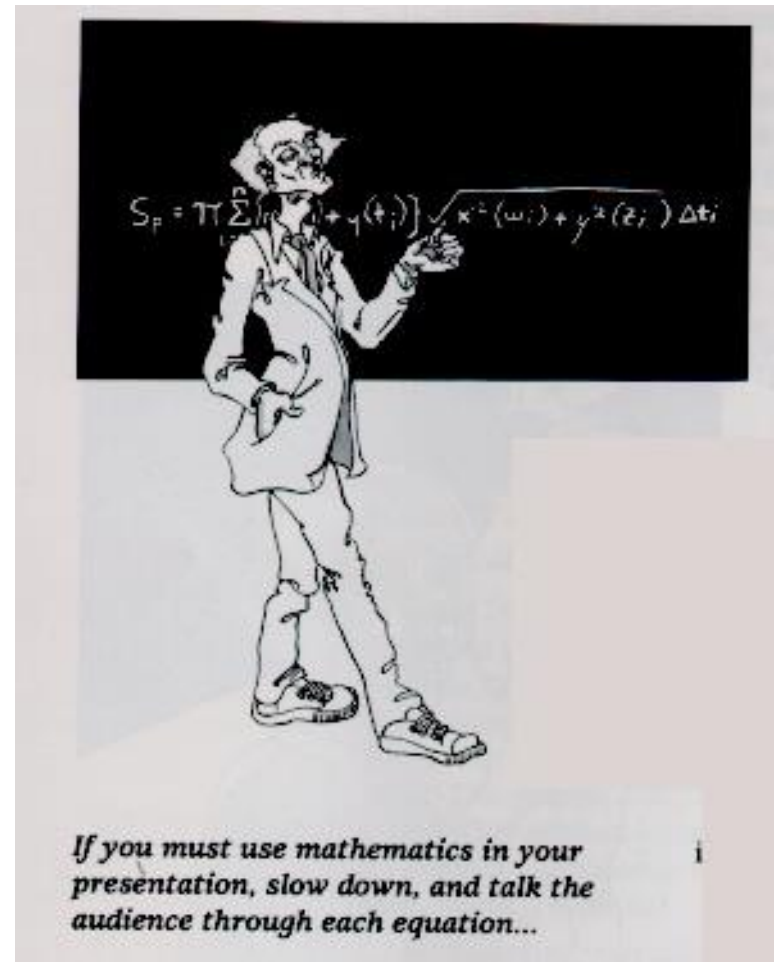
If you use equations

Slow down

Talk through step by step

Explain relevance

Combine with a picture that illustrates the physical principle involved



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

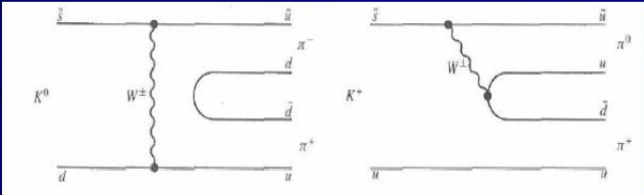
## Don't overuse PowerPoint animations and sounds!

## Make sure there is good contrast between text and background

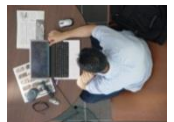
## Use simple (or no) backgrounds on slides

CP

- Parity invariance fails, combine it with charge conjugation to create a new invariant
- Converts the right-handed anti-neutrino into a left-handed neutrino- exactly what we observe in nature
- Neutral kaon experiment



The diagrams illustrate the decay of neutral and charged kaons. The left diagram shows a  $K^0$  (composed of  $s$  and  $\bar{d}$ ) decaying into  $\pi^+$  and  $\pi^-$  via a  $W^0$  boson. The right diagram shows a  $K^+$  (composed of  $u$  and  $\bar{s}$ ) decaying into  $\pi^0$  and  $\pi^+$  via a  $W^+$  boson. The  $W$  bosons are represented by wavy lines, and the quark lines are solid.





# Use “normal” colors

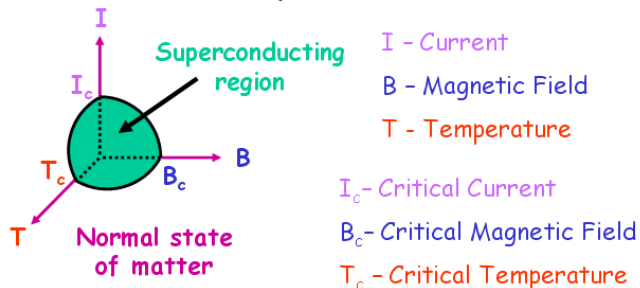
DON'T use red/green or red/blue as contrasting colors

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

Superconductivity is an electronic state of matter that exists below certain currents, magnetic fields, and temperatures.



Strive for easy reading

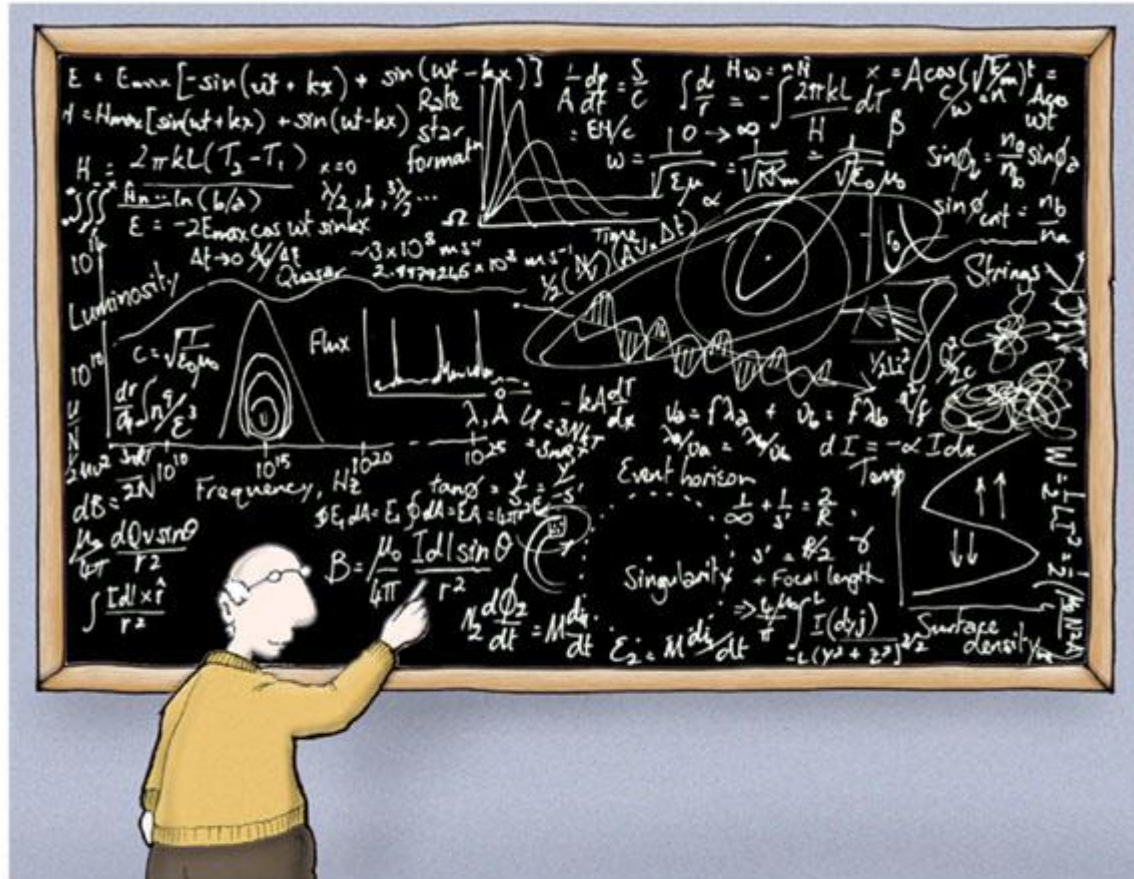
Strive for easy reading

Strive for easy reading





# 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

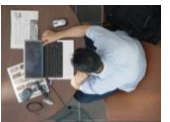
Don't block the screen

## **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:

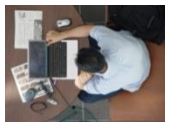
**Don't show any material on slides (e.g., figures, equations, text, etc.) you can't explain!! This will invite questions you don't want!!**

## **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

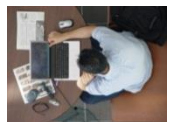
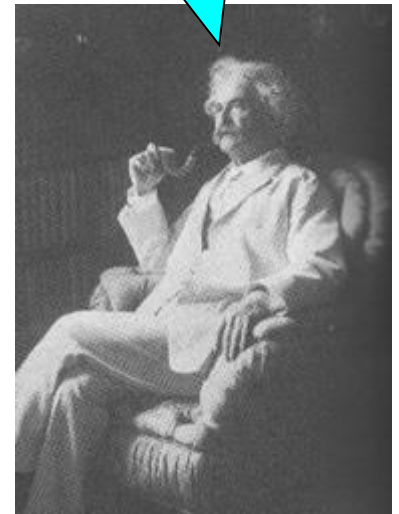
Write the key point to make for each slide

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*



# **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**

