

Research Presentations

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- Planning
- Preparing
- Presenting
- VISUAL AIDS!!!
- Conclusions

A Talk is NOT a Paper

- ❑ Cannot cover everything
- ❑ Cannot go into the same detail
- ❑ Make hard decisions about content
- ❑ Time required is roughly the same
 - For a paper, time is in the writing and editing
 - For a talk, time is in the planning and practicing!

Hearing vs. Reading

- | | |
|--|--|
| ❑ Linear | ❑ Skip around |
| ❑ Hear everything once | ❑ Can reread hard parts |
| ❑ Depend on speaker to make organization clear | ❑ Depend on headings to make organization clear |
| ❑ Speaker must repeat key points | ❑ Reader finds key points in abstract, conclusions |

Hearing vs. Reading

- ❑ Once lost, listener cannot recover
- ❑ Pace set by speaker
- ❑ People may zone if you're dull or confusing, but they'll try to recover at your Conclusions
- ❑ If lost, go back and reread hard parts (or pitch article)
- ❑ Pace set by reader
- ❑ Some people skim, or read only abstract, or conclusions, or only look at the pictures...

Speaker controls the flow of information

- ❑ Not like a paper, where reader controls it
- ❑ Therefore, **ORGANIZATION** and **PLANNING** are key.

Don't ask "What am I going to talk about?"

- ASK *WHY?*
- Inform or instruct (e.g., at a conference)
- Persuade or sell (dissertation defense)
- Arouse interest (hire me!)
- Inspire or initiate action (fund me!)
- Evaluate, interpret, clarify
- Gather ideas/lead discussion
- Entertain

EVALUATE YOUR AUDIENCE

- Technical? Students? Lay people?
- More informed or less informed than you?
- Why are they there?
- What do they want?

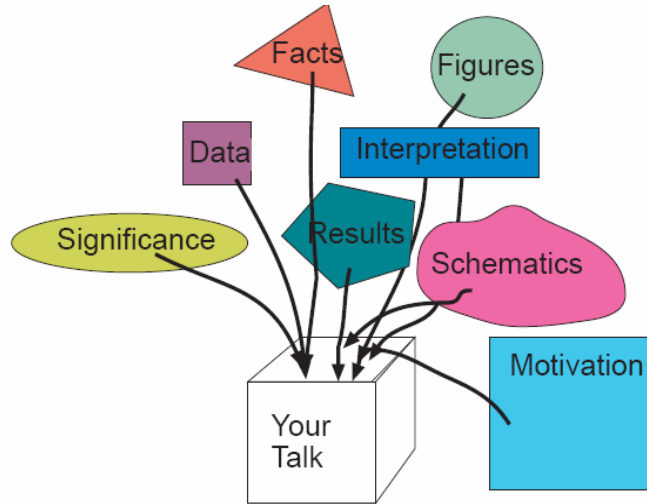
Where? When?

- ❑ What kind of a room? Big, small, loud, hot, dark, hard to find...
- ❑ Audio visual equipment? What do you need, and what is your backup?
- ❑ Stage? Microphone? Should you bring a pointer?
- ❑ Early in day? End of day? *Right after lunch???*

Check it out in advance

- ❑ Make sure projector works and has a spare bulb
- ❑ Learn how to use microphone
- ❑ If using a computer, make sure it works » ... and have a backup!
- ❑ Decide where you'll stand, what kind of pointer you'll use, where you'll set your stuff

Now, gather information



IT
WON'T
ALL
FIT!

How should you organize?

- According to the material
 - In order of discovery?
 - In order of cost?
 - In order of difficulty?
- According to the audience
 - Start with simple case
 - Build up complexity
 - Relate materials to what they already know

COMBINATION

WRITE AN OUTLINE

- ❑ Is every in it necessary? Is everything in it important?
- ❑ Will the audience understand each idea, or does it need a background slide to explain it?
- ❑ Will anything you've included raise questions you're not prepared to answer?
- ❑ Have you made and repeated your key points?
- ❑ Will it fit into the time allowed?

EVERY TALK SHOULD HAVE

- ❑ Title slide
- ❑ Organization slide
- ❑ Good stuff in the middle
- ❑ Conclusions slide

Title slide

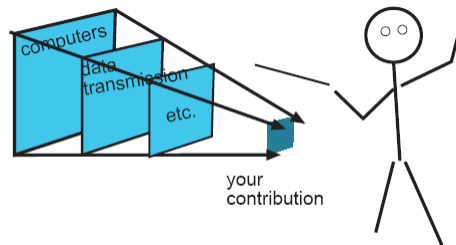
- Should contain:
 - Title of talk
 - Authors and coauthors
 - Organization
 - Sponsors
- When presenting:
 - Read or paraphrase the title
 - Pronounce everybody's name
 - Say who you are
 - Thank sponsor (if applicable)

Next make an organization slide

- Organization of your talk
- Helps audience figure out what your scope is
 - Theoretical?
 - Experimental?
 - Speculative?
- Give you a chance to say your key point for first time

ALWAYS Start with big picture

- ❑ Explain the problem you're trying to solve
- ❑ Explain how it fits into big scheme of things
- ❑ Approach you took and why



Are they lost yet?

- ❑ Remember: if you jump right into your results without the big picture, you've lost your audience
- ❑ Once you've lost them, you won't get them back until your final slide.
- ❑ If then.

Repeat your key points

- ❑ Tell 'em what you're going to tell 'em, tell 'em, then tell 'em what you told 'em.
- ❑ State key points at beginning and end and any chance you get in the middle
- ❑ Use short, internal summaries:
 - "I've just shown that the equations predict a laser is brighter than a light bulb; now I will present the experimental data ..."

PRACTICE YOUR TALK



- ❑ Do it out loud.
- ❑ With the visuals.
- ❑ Time it.
- ❑ Decide what to cut out.

Practice it again.

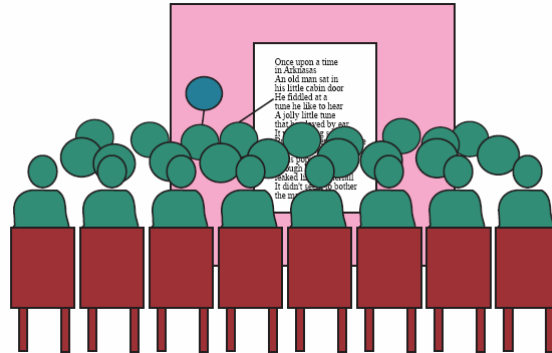
- ❑ And again.
- ❑ Wait a day or two.
- ❑ Practice it again.
- ❑ Practice it again the night before you give it.
- ❑ Time it every time.



The worst mistakes (and most common)

- ❑ No big picture.
- ❑ Crappy slides.
- ❑ Too long.
- ❑ Didn't practice.
- ❑ Can't follow.
- ❑ Didn't reiterate key points

VISUAL AIDS

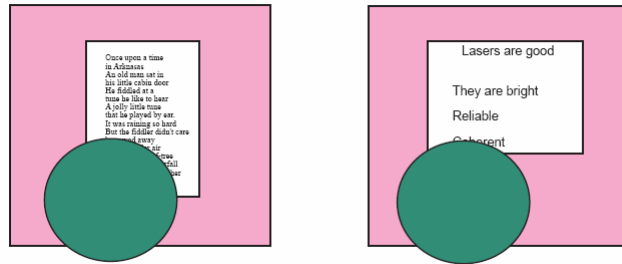


- ❑ This is the problem.

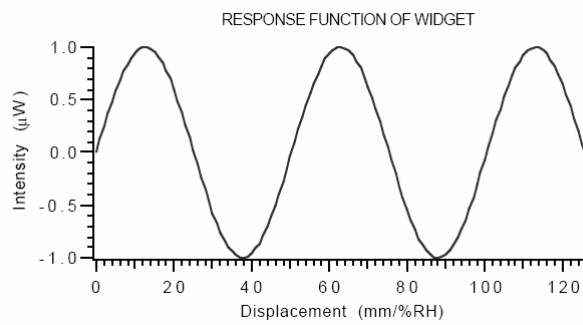
SOLUTIONS:

- ❑ USE THE HORIZONTAL FORMAT!!!!
 - Place slides up high on projector
- ❑ USE LARGE TYPE
- ❑ LIMIT THE AMOUNT OF INFORMATION PER SLIDE
- ❑ Keep it simple

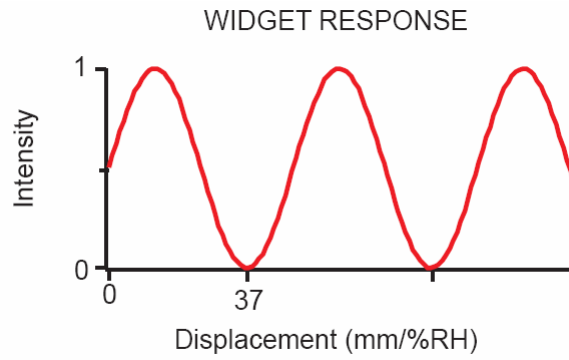
Compare:



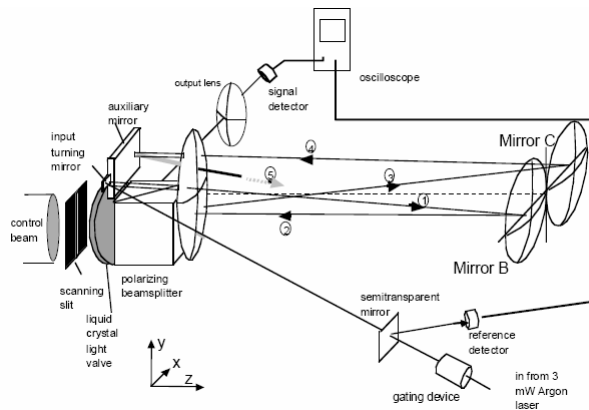
Bad



Good



Good for a paper...



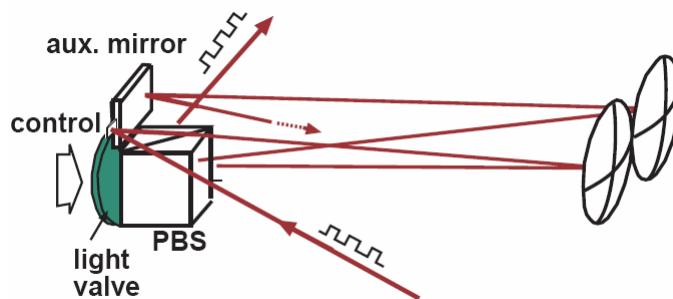
But...

- ❑ Can study a paper, can view slide only for short time
- ❑ Too many details: viewer stops listening while trying to figure out figure
- ❑ Viewer panics because can't comprehend figure before you take it down

To fix:

- ❑ Remove all ancillary stuff
 - Remove power supplies, non-critical components, labels, arrows if possible
 - Strip figure down to bare bones
- ❑ Make lines bold!
- ❑ Simplify, simplify, simplify.
- ❑ Use color to make things stand out or group like objects

Better for a talk



Compare

- The Advantages of Fiber Optics:
 - 1. They are cheaper than wire for most installations
 - 2. Fiber optics are more durable and last longer than copper wire
 - since they are not susceptible to corrosion.
 - 3. Fibers are difficult to tap.
 - 4. Fibers are insensitive to electromagnetic interference (EMI)
 - such as lightning or machine noise.
 - 5. Fiber optics have higher bandwidth than copper wire, so more
 - information can be transmitted per second.
 - 6. Fibers are less sensitive to nuclear radiation.
 - Fiber systems are expandable once installed by using wavelengthdivision
 - multiplexing on existing fibers.
- Disadvantages:
 - 1. Fibers are sharp and could put your eye out.
 - 2. Fibers are not cost-competitive in some applications. For
 - example, it is not usually worthwhile to lay fiber to the home
 - while it *is* cost effective to lay fiber in the loop.
 - 3. Fibers are difficult to splice because of alignment problems and
 - the need to have good cleaves on both surfaces. They can't be
 - soldered like wire.
 - 4. Fibers make ridiculous wigs and tacky lamps.
- Too many ideas
- Too small
 - that was 12-point, standard for typing
- Serif font
 - great for reading on a page, bad for slides
- Long sentences
- Audience stops listening because they're trying to read this

Serif and non-serif fonts

- Serifs help carry the eye along lines of text-great for pages of text
 - Non-serif fonts better for single words, phrases
 - Notice billboards always use non-serif fonts.
- Serif fonts:
 - Times
 - Palatino
 - Courier
 - Non-serif fonts:
 - Helvetica
 - Geneva
 - Arial

The Louisiana State University



The Louisiana State University

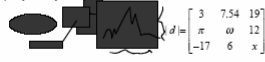
To fix

- Break up into more than one slide
- Use big fonts
- Use non-serif font like this one
- Capture each thought in a phrase

Use white space

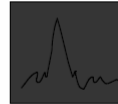
TITLE OF MY SLIDE

Once upon a time in Arkansas, an old man
Sat in his little cabin door, he fiddle at a tune
He liked to hear, a jolly little tune that he
played by ear



TITLE OF MY SLIDE

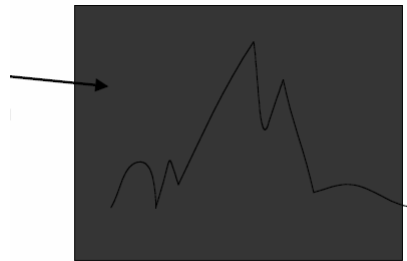
One idea
per slide



Suppose they have to see more than one thing at once

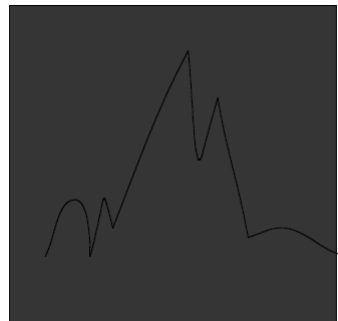
- Will help to see this graph while discussing equation

$$|d| = \begin{bmatrix} 3 & 7.54 & 19 \\ \pi & \omega & 12 \\ -17 & 6 & x \end{bmatrix}$$



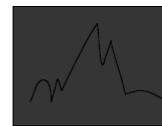
Then show them one first

- Here are my main points about the graph
- Audience gets familiar with while I'm talking
- Then show it again, adding the equation



Now they don't need to see it in as much detail

- Graph is there, but smaller- they can refer to it
- Equation is now main point, and they can see it well



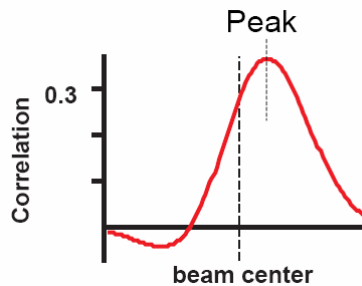
$$|d| = \begin{bmatrix} 3 & 7.54 & 19 \\ \pi & \omega & 12 \\ -17 & 6 & x \end{bmatrix}$$

Presenting Equations

- ❑ Do you have to?
- ❑ What can you say about equation that audience will really get?
- ❑ What point are you trying to make using the equation?

Presenting plots

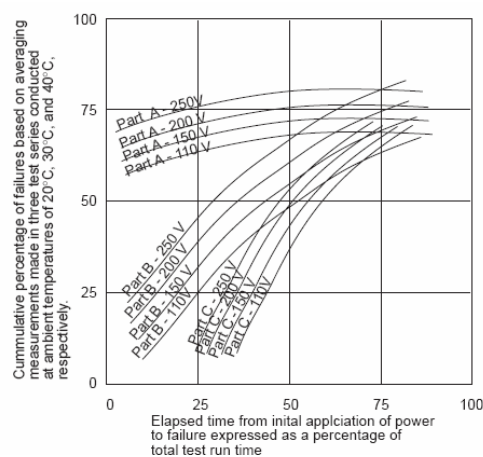
- ❑ Keep them simple
- ❑ Read the axes out loud
- ❑ Tell audience what you're looking for
- ❑ Point it out to them
- ❑ Tell them whether it's good or bad



Complicated Plots

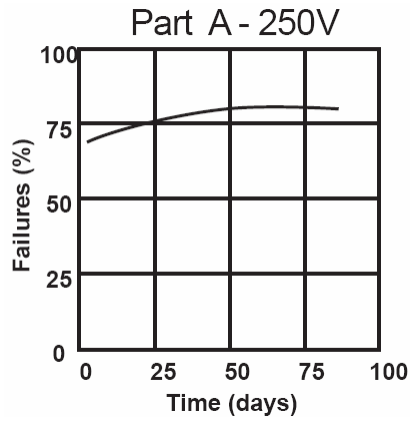
- As with any complicated stuff:
 - Start with easy idea
 - Gradually add complexity, explaining each step
 - Build up to complete plot
 - Explain what you're looking for
 - Point it out

Suppose you want to present:



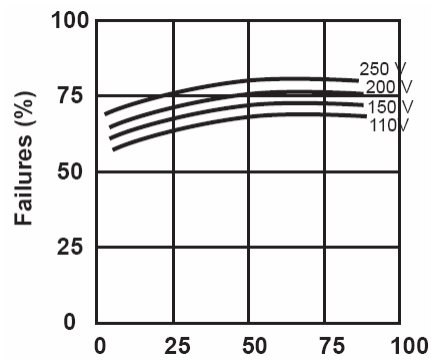
After R. M. Woelfle, Ed., *A Guide for better technical presentations*, IEEE Press, New York, 1975.

Start with this:



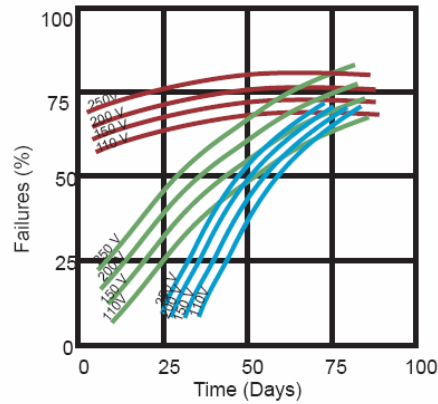
After R. M. Woelfle,
Ed., *A Guide for
better technical
presentations*,
IEEE Press, New
York, 1975.

Add other lines for same part



After R. M. Woelfle,
Ed., *A Guide for
better technical
presentations*,
IEEE Press, New
York, 1975.

Then add other parts



After R. M. Woelfle,
Ed., *A Guide for
better technical
presentations*,
IEEE Press, New
York, 1975.

Use of Color



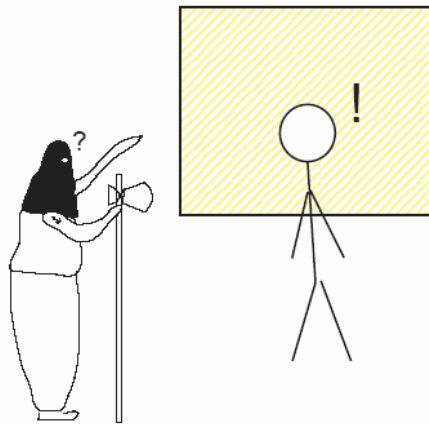
Find the round things

Find the pink things

CITATIONS

- ❑ You **MUST** cite all non-original material
- ❑ Remember, the guy who wrote that paper might be in the audience
- ❑ Or his best friend...
- ❑ Or one of his students...

The dreaded Question and Answer period



Relax, it's not that bad

- ❑ People are on your side (really!)
- ❑ You'll know answers to 80% of ?'s
- ❑ OK to say "I don't know"
 - "I haven't looked into that aspect."
 - "I'm not familiar enough with the quantum devices to give you a good answer."
 - "That'd be an interesting question to look into."
 - "I don't know, but maybe someone else here can answer that."

How about that nasty guy?

- ❑ Happens rarely
- ❑ Makes everybody mad- they'll side with you
- ❑ What does he REALLY want?
 - Wants to show what *he* knows?
 - Wants to hear himself talk? (sometimes an answer isn't necessary, just an acknowledgment)
 - Genuinely wants to put you down? (very rare)

Traps to watch for:

- ❑ Hypothetical question:
 - "Suppose I used your device to jack up my car. What would happen?"
- ❑ You don't have to answer it! How should you know?
- ❑ Response: "I don't know. I haven't looked into that application."
- ❑ Don't BS. Don't guess. Don't speculate.

Loaded preface:

- ❑ "Given the deservedly low regard for..."
- ❑ "Do you mean to tell me..."
- ❑ "Since all you big companies get together to set your prices..."

- ❑ Don't ignore it, address it: "I'd be happy to address your question, but first let me address your allegation..."

Loaded words

- ❑ Failure, overrun, delay, swindle, too (small, impractical, expensive)
 - "The poor design of your laser makes it impractical for jacking up cars..."
- ❑ Reword the question
 - "The question was, why was the laser made from a semiconductor chip instead of industrial steel"

Cont.

- ❑ "Clearly we have a difference of opinion here..."

Terry C. Smith, "Making Successful Presentations, Wiley 1984
- ❑ If he won't drop it, offer to discuss it privately after the session
 - Makes it easier for you to blow him off
 - Makes it so no one else overhears
 - Doesn't waste audience's time

Your behavior

- ❑ Try not to sway, fidget, rap the screen, click your pen, jingle your change
- ❑ Do not ignore interruptions, acknowledge them
- ❑ Do not apologize for bad slides, unclear pictures...
- ❑ Do not read from a script (if you can help it)

Laser Pointers

- ❑ Point to what you're talking about
 - Especially if you're hard to understand
- ❑ Don't wave it wildly
- ❑ Don't turn it on and off too quickly
- ❑ Let people see the point, then follow it to *your* point.

Do:

- ❑ Smile (puts people at ease)
- ❑ Make eye contact (makes them pay attention)
- ❑ Take a deep breath before starting
- ❑ Pause for effect
- ❑ Show enthusiasm
- ❑ Repeat your key points
- ❑ Repeat your key points

Finally...

- ❑ Remember to state your key points more than once
- ❑ Short, internal summaries
- ❑ Tell 'em what you're going to tell 'em, tell 'em, tell what you told 'em
- ❑ Be sure to summarize your keys points

Summary



- ❑ A talk is not a paper
- ❑ Can't cover everything
- ❑ Restate your main points in different ways
- ❑ Simplify your slides
- ❑ Practice your talk