

# Scientific presentations



Johanna Hannan, PhD  
Hannan@urology.wisc.edu

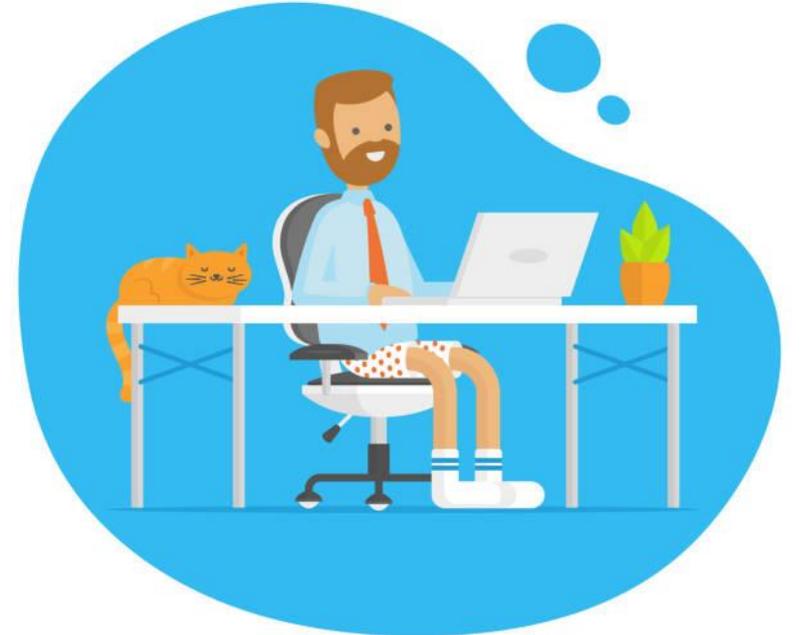
# Before you begin.....

## **Know your audience!**

- Before planning your presentation, you should clearly define:
  - Who is your target audience?
  - How do you want to impact your audience?
  - What will you need to do to help your audience understand and appreciate your talk?

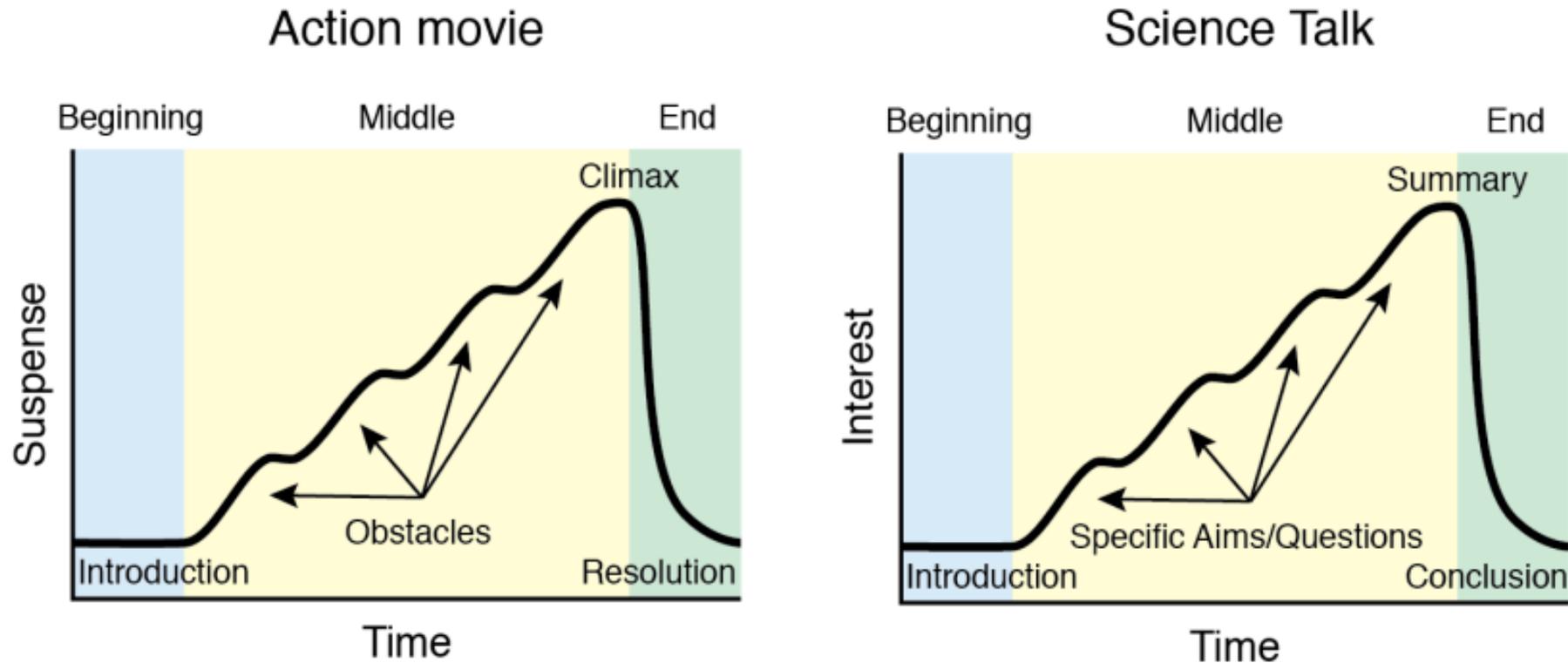
# Three elements of a scientific presentation

- 1. Structure/narrative**
2. Visual aids (slides)
3. Delivery of the presentation



# A good science talk is a good science story

**With a beginning, middle and end**



# Start with the big picture

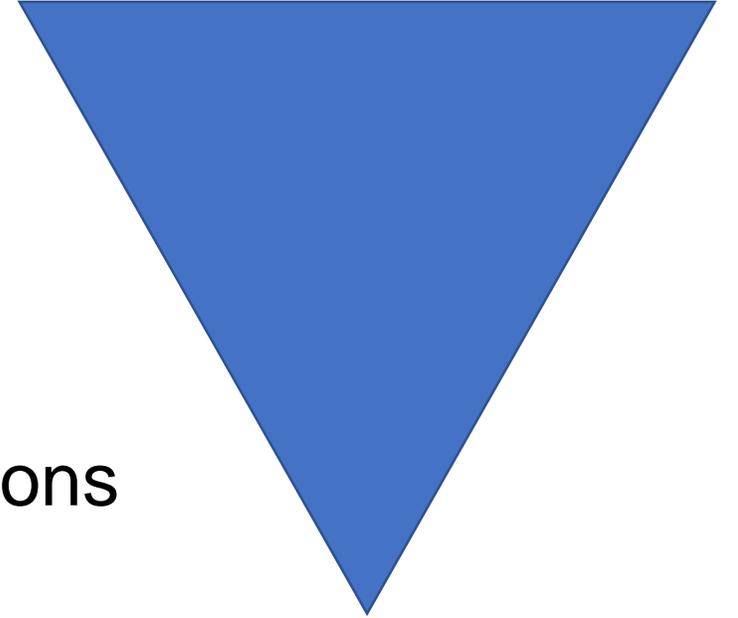
- General → Specific

BPH affects XXX people and impacts QOL

It is a fibrotic disease with lack of treatment options

We are interesting in XXX fibrotic pathway

Could lead to new therapies for patients



# Inform your audience why they should care

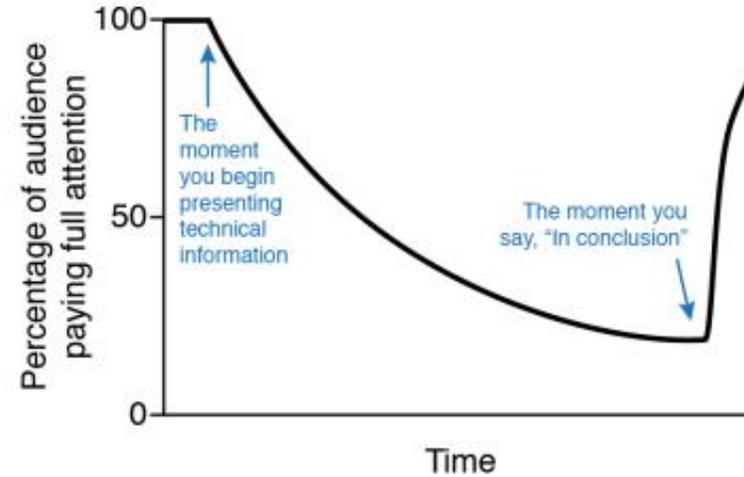
- Explain how your research may inform the treatment or etiology of a medical disorder
- Convey the applicability of your research to real-world challenges
- Explain that an aspect of the universe seems strange and mysterious, but the work you are describing is revealing a newfound understanding

# Immediately state your question/goal

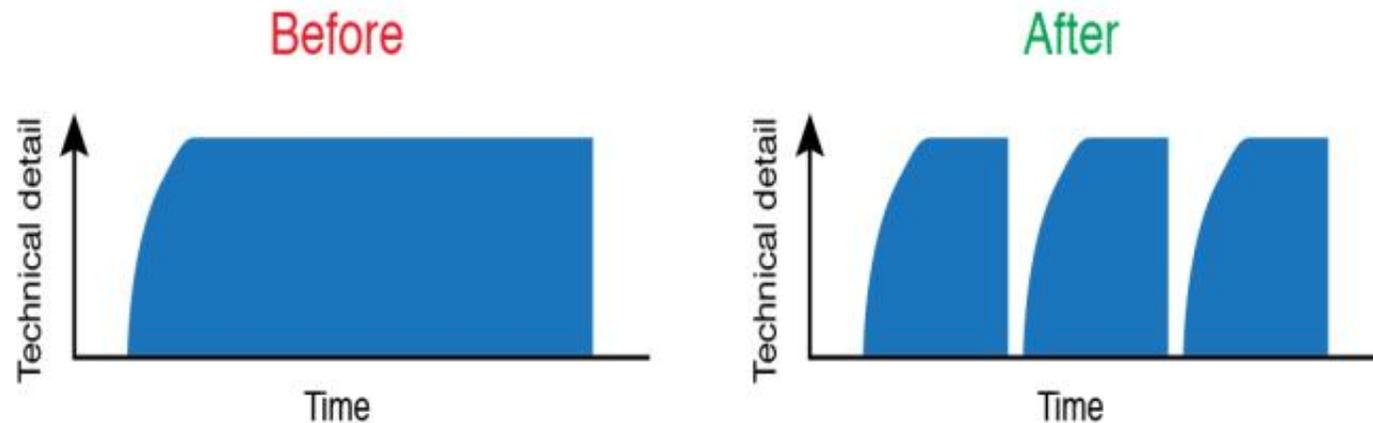
- Clearly tell the audience what question you are going to answer in your study

# Break up your information into chunks

The percentage of your audience paying attention will steadily decrease over time



Occasionally “come up for air,” during your presentation summarizing what you have said and asking if there are any questions



# Tell a story for each result

For every result (e.g. graph, table, chart), narrate a brief rationale, statement of methods, explanation, and conclusion, like the example below:

*“Next, we wondered whether FOXO3 directly binds to the NPY promoter. To test this hypothesis, we used a chromatin immunoprecipitation assay. This assay involves using an antibody to bind to and purify a protein of interest (in this case, FOXO3), then uses PCR techniques to amplify any DNA that is bound to the protein. We found that the NPY promoter was indeed bound to FOXO3, supporting our hypothesis that FOXO3 binds and interacts with the NPY promoter.”*

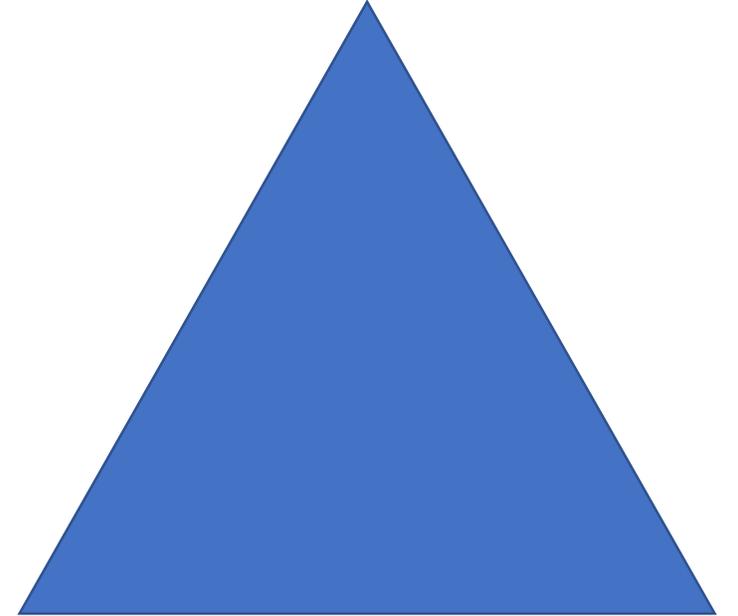
# End with the big picture

- Specific → General

We found XXX fibrotic pathway increases BPH

Inhibition prevented fibrosis

Could lead to new therapies for BPH patients



# End with the big picture

- Specific  $\longrightarrow$  General
- Deliberately emphasize 1-2 take-home messages

**Key Point #1**

**Nrf-2 is expressed in mesenchymal stem cells**



If you only remember one thing....



Elephants are capable of vocal learning

**Overall Result:**

**We developed a method to culture mature astrocytes**



# End with the big picture

- Specific  $\longrightarrow$  General
- Deliberately emphasize 1-2 take-home messages
- End your talk with a summary diagram (Biorender)

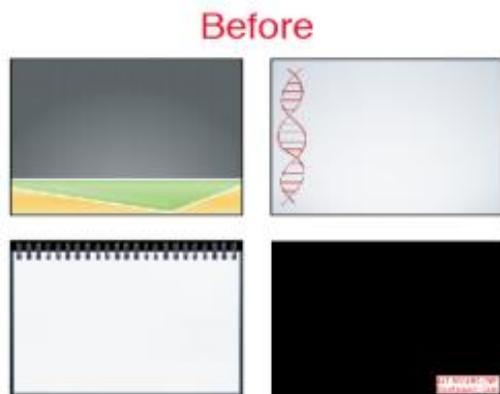
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# Choose slide backgrounds to optimize foreground content

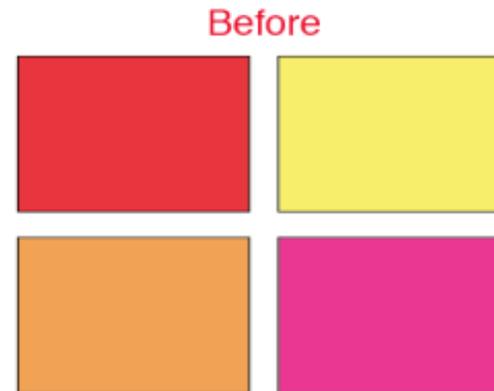
- Use backgrounds that lack visual content
- Dark background for fluorescence data



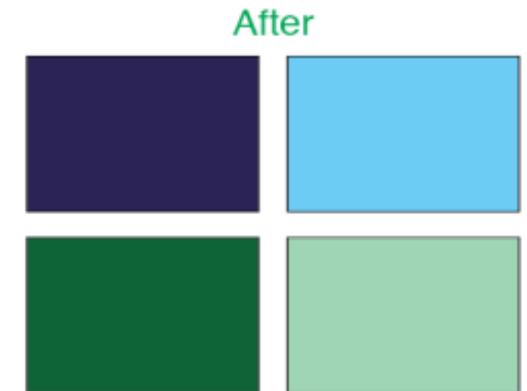
Slides with busy backgrounds reduce the amount of space you have for your own visual elements.



Slides with clear backgrounds allow you to fill the entire space with your own content.

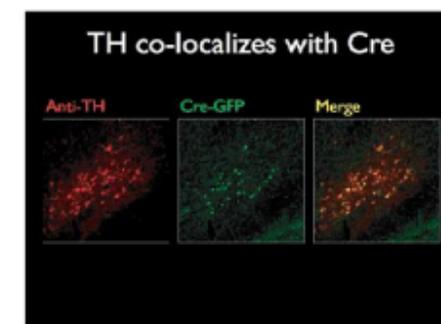
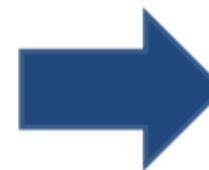
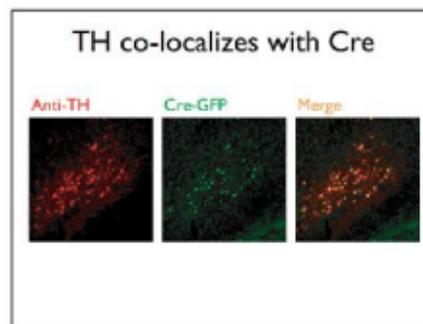
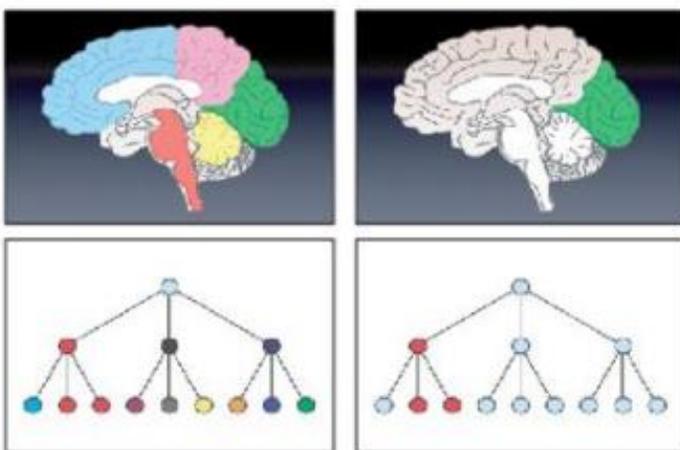
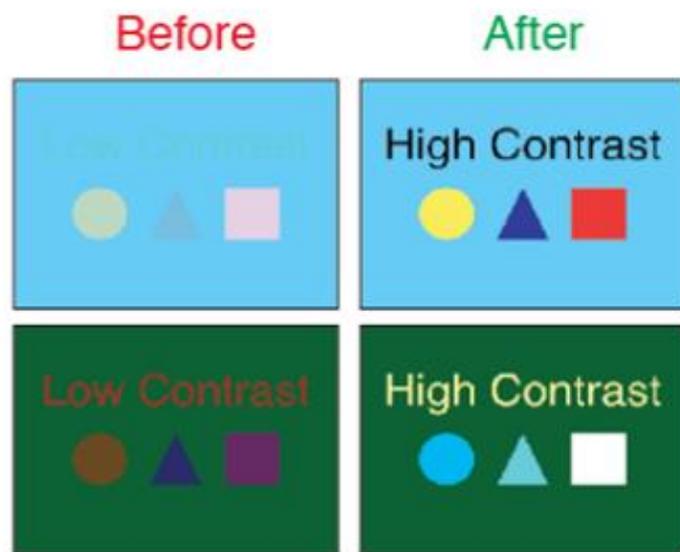


Backgrounds composed of warm, bright colors can be too intense on the eye.



Backgrounds composed of cool tints or shades are comfortable to look at for long time periods.

# Use color wisely



# Use a sans serif font

**Serif**

Calibri

Century Gothic

Gill Sans

Helvetica

Myriad Pro

Tahoma

Verdana

# Ensure all text is easy to read

- Use 18-36 pts font to be seen in the back of the presentation room
- Use smaller fonts for citations and footnotes
- All text should be visible from back row



On a slide, it is harder to read underlined words or words in ALL CAPS

If you want to emphasize a word, use **bold letters** or *italics*

# Keep text on a slide to an absolute minimum

## A common mistake....

- How many times have you seen a slide like this? Probably too often.
- The use of too much text on one slide is so common that many of us don't even think to question it.
- If presenters are going to write out everything they are going to say during their delivery, then what is the point of attending their presentations? They might as well send their slides to us over email and we can read them whenever we want.

## ....but no less annoying.

- Seriously, slides like this are awful. Especially when every slide in the entire presentation looks like this.
- Too much text on a slide is one of the top reasons why audiences stop paying attention.
- One hundred years ago, movie studios realized that silent movies shouldn't contain too much dialogue because audiences didn't enjoy reading text on a screen. You'd think we would have learned the same concept in slide presentations by now....

## ....but no less

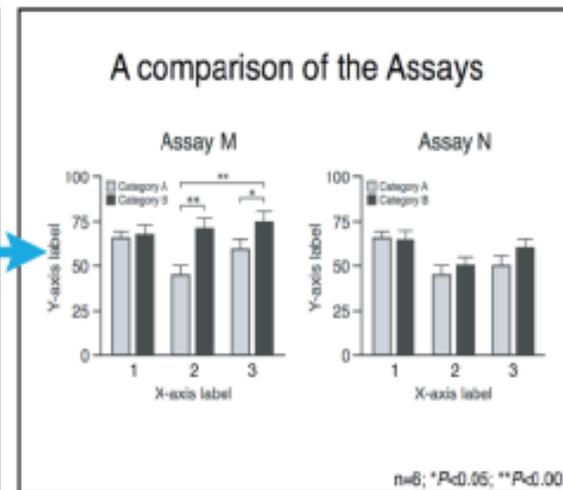
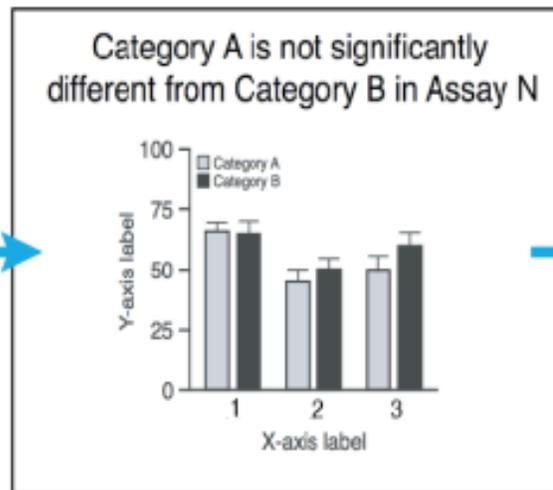
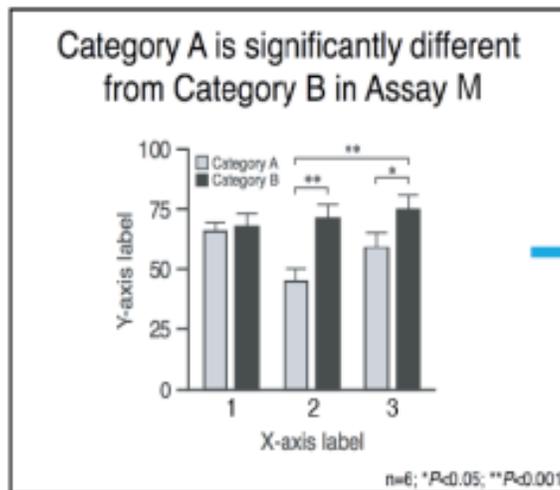
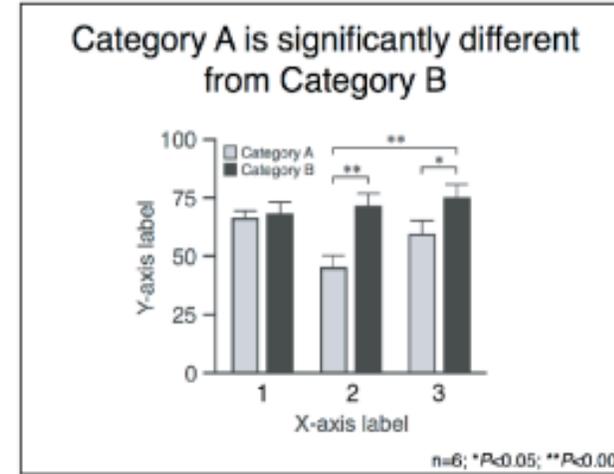
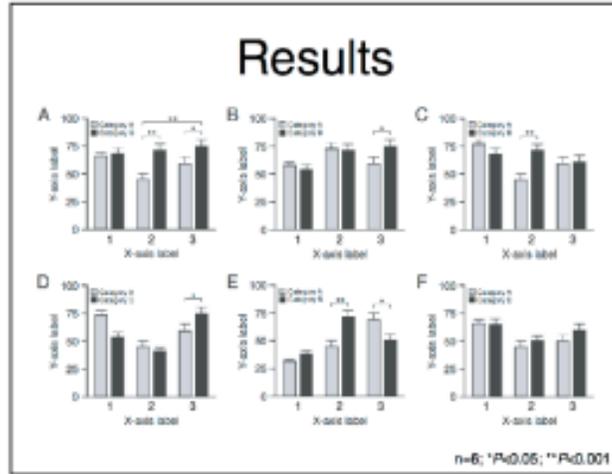
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Much Better!



# Try to make only one point per slide “less is more”



# Use animations/slide transitions wisely

What the presenter  
is thinking:

I look more skilled  
because I'm turning  
my photo into confetti

.....and sparingly

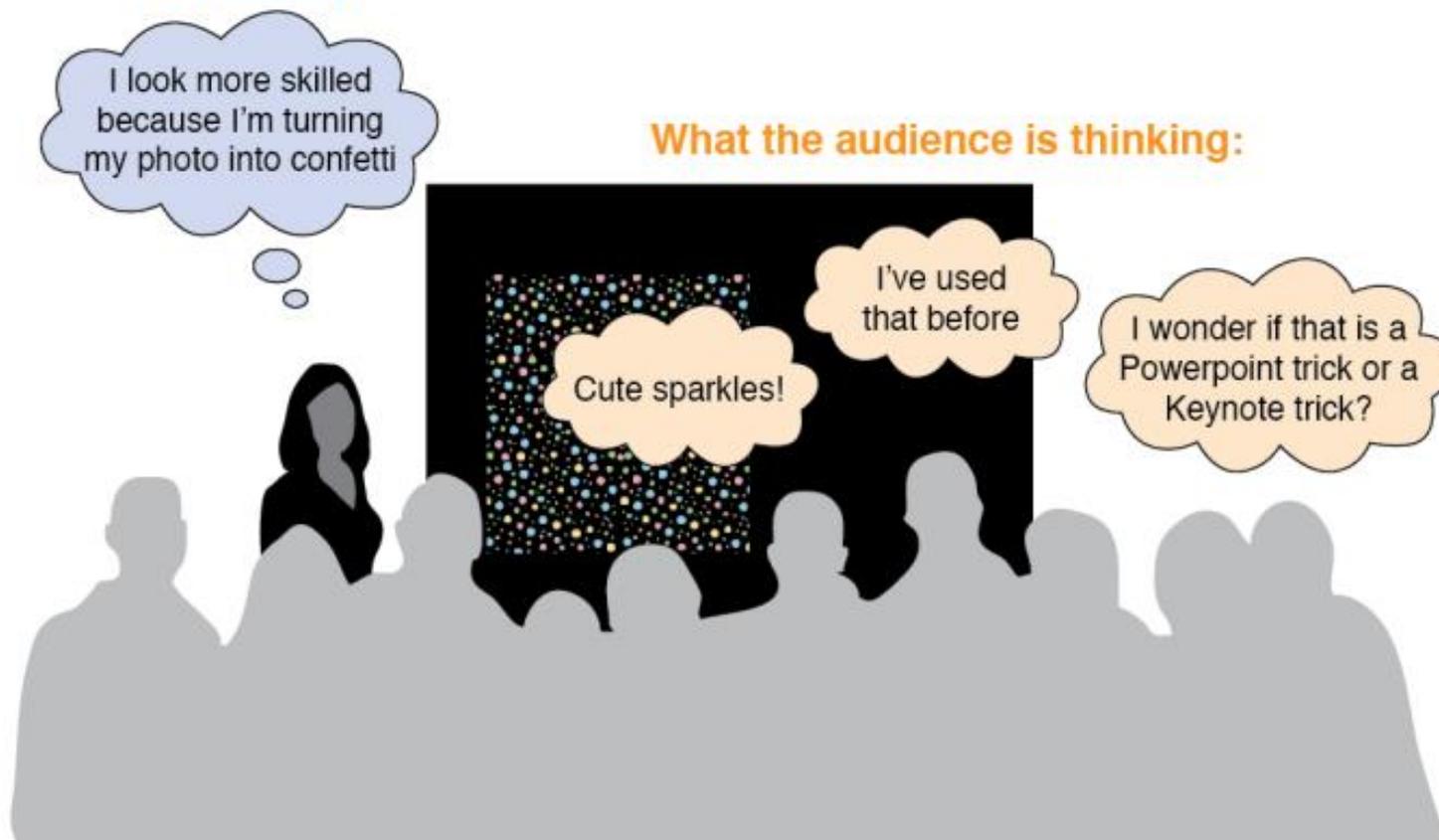
What the audience is thinking:

Cute sparkles!

I've used  
that before

I wonder if that is a  
Powerpoint trick or a  
Keynote trick?

What the audience is *not* thinking about: **your message**



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# Rehearse and practice for good delivery

## **Practice, practice, practice**

Talk to an empty room, your pets, in the shower, riding your bike, etc.

Try to rehearse so that you know exactly what you will say and, importantly, how long it will take you to say it

# Prepare for inevitable nerves and anxiety

## **Practice & preparation are key!**

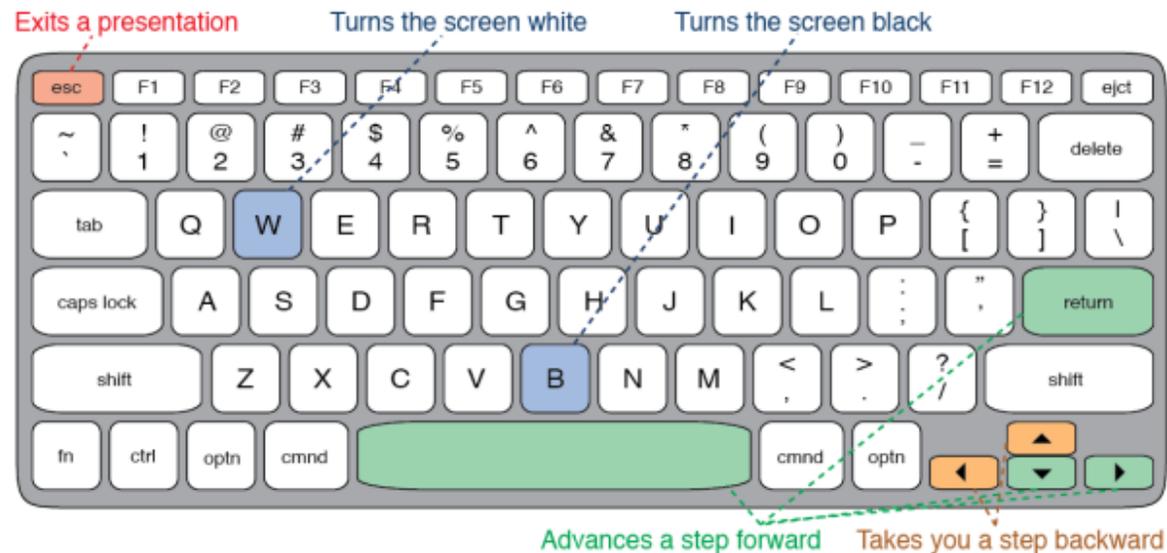
### **Some tricks:**

- Rehearse for the 5 min before your presentation begins
- Memorize and rehearse the first 1-2 min of your talk most of all
- Walk around your presentation space
- Bring a water bottle

# Practice using technology

Know how to use your keyboard to control your presentation including all shortcuts

- Remember power cord and adapter
- Determine how to dim or turn off lights if necessary
- Bring a timer – phone or use presentation mode in PowerPoint
- Bring a Laser Pointer for traditional screens
- Use computer cursor for LED screens



# Soliciting and answering questions

- Consider rephrasing the question in your own words before providing an answer
- Prepare for difficult questions from the audience
- Remain calm and project confidence
- Don't be afraid to say "I don't know," while speculating on an answer
- Offer to talk with the questioner after the Q&A session is over



# Remember to have fun!

- Remember that designing science talks is an art form, and there is no such thing as “the perfect talk”
- The audience is on your side and wants you to do a great job
- Each presentation you give is another evolution in your development as a presenter, and another experience to learn from for the future