



Creating Your 20.109 Presentation

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Presentation Basics

**According to *The Book of Lists*,
public speaking is the Number One human fear.**

Outline

- Before you begin ...
- Structuring the presentation
- Principles of effective visual support
- Delivering the presentation

Before you begin...

Oral vs. written communication

- Challenge for the presenter:
 - Must communicate in “real time”
- Challenge for the audience:
 - Can’t control rate of presentation to match their comprehension
 - Can’t re-read sections

Ask yourself...

- What is the main point I want to make to my audience?
- Why is this interesting or important?
- How do the data support my main point?
- What part of my story can I tell with the data in the allotted amount of time?

Know your material and its message

Content is the key!

- Collect more information than you will use
- Anticipate problem areas
- Research unfamiliar words, methods, etc.
- If possible, get a broader context
 - Read a review of paper
 - Read later paper by the same group

Know your audience

- Who are they?
- What do they know?
- What might some of them **not** know?
- What do they want to know more about?

A journal club has a distinct audience and purpose

Audience

- Fellow researchers (peers)
- Similar (not identical) technical backgrounds
- Not experts on this particular research project

Purpose

- Get acquainted with research project
- Understand research in context
- Consider limitations of research
- Learn how it might apply to future projects, work in 20.109

Structuring the Presentation

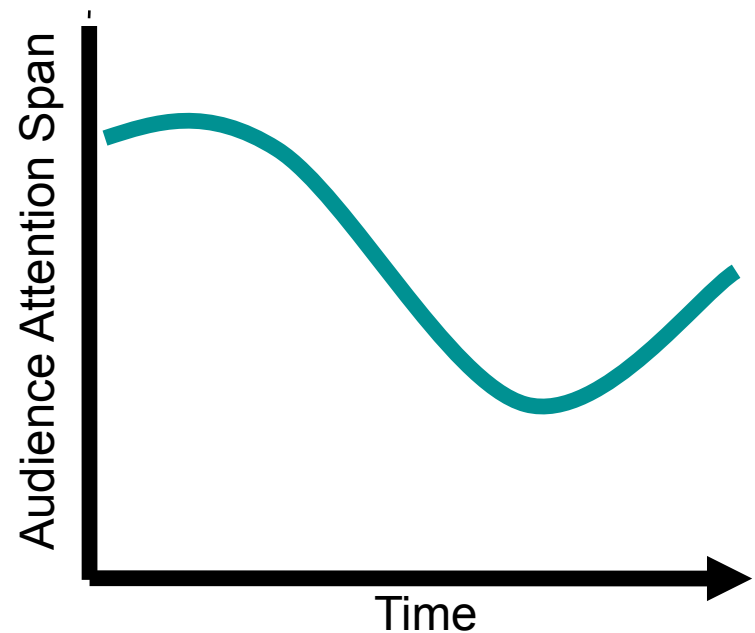
Tell a story

- Narrative Structure
 - Beginning: **introduction**
 - Middle: **data**
 - End: **summary**
- Show how each section relates to and builds upon the one before it
- Engage the audience's interest as they follow the narrative

Structuring the Presentation

Preview and Review

- Map out goals of the talk in advance
 - Use topic sentences in body of the talk
- Summarize
 - at end of your talk
 - at end of each section



Guide your audience through the logic of the scientific process



Arrange ideas in a logical sequence

- Most important point first
- Emphasize key points as you make them
- Provide explicit transitions between points

Photo courtesy of [cdine](#) on Flickr.

Introduction

- Introduce yourself
- Give the title (+ author, journal) of your article
- **In one sentence, introduce the central question or problem of the experiment**
- State significance of experiment; why should we care?
- Briefly explain necessary background
- Give audience a preview of approach to problem

Data

- Forms bulk of presentation
- Drawn from Methods, Results and Discussion of paper
 - keep explanation of methods to a **minimum** -- only as much as needed to understand results
 - integrate discussion as you go
- Data are only worth presenting insofar as they relate to your central question

Summary

- What do you want your audience to remember about your talk?
- Remind your audience of primary findings
- Explain what these findings contribute to the field
 - Emphasize the potential interest/utility of findings to your specific audience

Q & A

- Anticipate questions not covered in the presentation
- OK to bring extra slides
- OK to acknowledge gaps in expertise
 - Explain what you *do* know

Principles of Visual Support

Or: Why use slides at all?

Disadvantages:

- disruptive -- pull audience's attention away from the speaker and onto the screen

Advantages:

- can convey a point quickly
- add variety and interest
- audience recall increases dramatically when the speaker uses **effective** slides

Ask yourself: What specific message are you trying to convey with your visual?

Direct the audience's focus

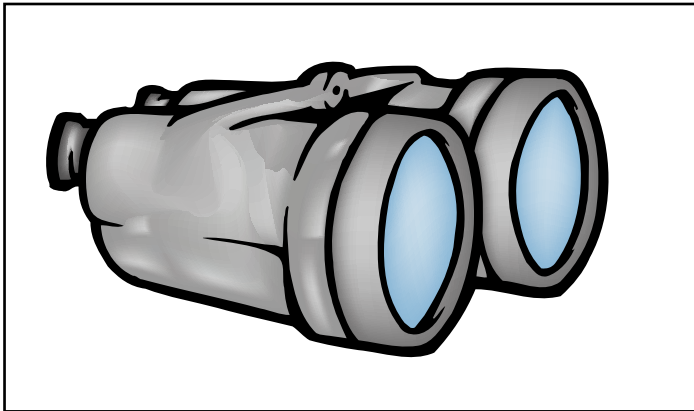


Image by MIT OpenCourseWare.

Title all slides

- Headings should clarify the main point of each slide

Use graphics liberally, keep them simple

- Average attention span per slide is 8 seconds

Use clear, explanatory labels for charts and diagrams

- Make sure to label axes!

Less is More

Limit number of slides

Say more than you show

- show primary points on slide; flesh out secondary points verbally

Minimize text

- Don't crowd your slides with a lot of text. Especially, avoid using complete sentences -- or worse, complete paragraphs. Either the audience will become engrossed in trying to read the text, and will stop paying attention to *you*, or else they'll wonder why you didn't just give them a handout already and save yourself the trouble of reading to them.

Avoid potentially annoying animation

- Really.

More Design Principles

Color

- Be **easy on the eyes**; don't **distract** from content
- Avoid **low-contrast combinations**

More Design Principles

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Type

- Sans serif headings
- Serif bullets
(serif "feet" make lines for ease of reading)
- Type at least 20-24 pt
- Limit upper-case type



Using graphics in a presentation

What story does this picture tell?

“As shown in Fig. 2, the loss of neuraminidase activity from the supernatant coincides with the disappearance of this 66-kDa protein. This indicates that neuraminidase activity is precipitated via the 66-kDa protein.”

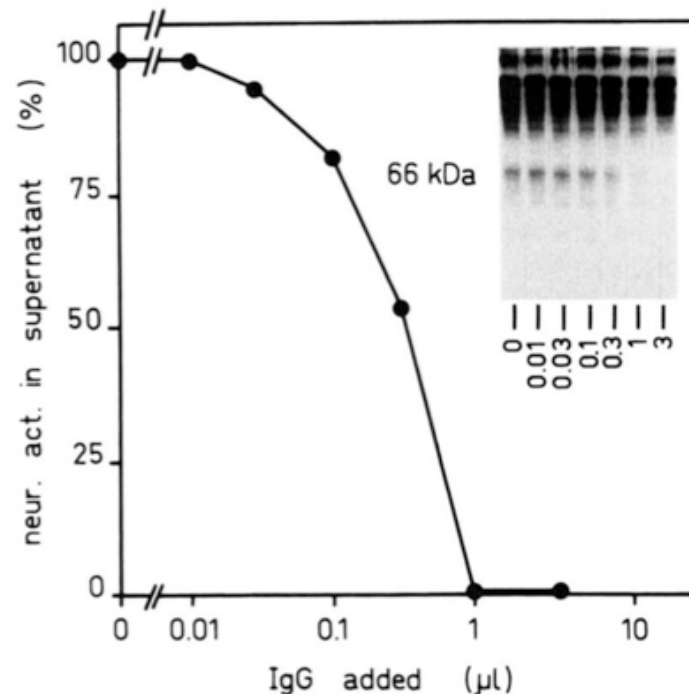
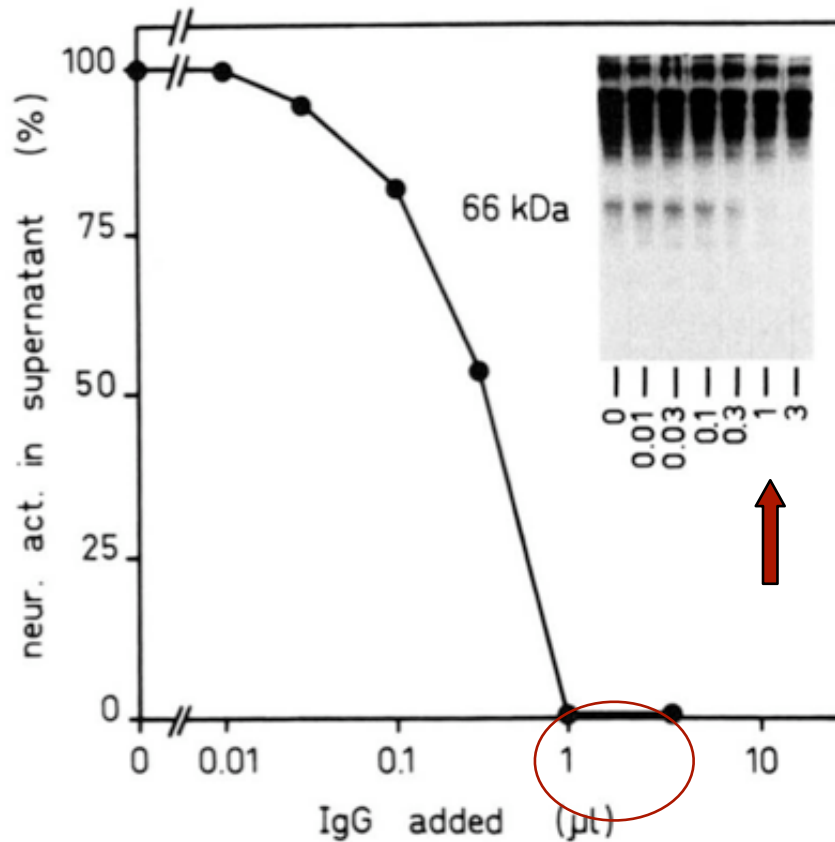


FIG. 2. Immunotitration of activated and stabilized human placental neuraminidase. Activated, stabilized neuraminidase was immunoprecipitated from a human glycoprotein preparation with increasing amounts of an IgG preparation prepared from neuraminidase-specific antibodies. Neuraminidase activity was measured in the supernatants. *Inset*, immunoblot analysis of supernatants using neuraminidase-specific antibodies.

Neuraminidase activity is precipitated via 66-kDa protein



immunoblot analysis of supernatants

Neuraminidase activity ceases with disappearance of 66-kDa protein!

This research was originally published in The Journal of Biological Chemistry. Van der Horst, G. T., et al. "Identification and in *Vitro* Reconstitution of Lysosomal Neuraminidase from Human Placenta." *J Biol Chem* (1989): 264: 1317-1322. © The American Society for Biochemistry and Molecular Biology.

Delivering the Presentation

Rehearse!

- Practice at least 3 times
- Practice with a colleague for feedback
 - Is your content clear?
 - Do you rock, squirm, gesture too much?
 - Is there room for improvements/adjustments?
- Time yourself
- What 3 questions will your audience likely ask?

On Presentation Day...

- Arrive early
- Check equipment and voice projection
- Bring a backup of your presentation

How to Connect with the Audience

Put yourself in the audience's place

- Explain novel ideas/terms or references
- Use everyday language and terms
- Clarify connections that may be obvious to you but not them

Engage the audience

- Establish eye contact; look at *people*
- Convey enthusiasm; if you aren't excited about your subject, your audience won't be either

A presentation is *two-way* communication

- Pay attention to audience reaction; modify your talk as needed

Standing

- Don't block the screen!
- Stand at a 45-degree angle to the audience
- Keep weight evenly dispersed on both feet



Photo courtesy of [egg on stilts](#) on Flickr.

Gesture and Movement

- Make non-verbal behavior deliberate; avoid extraneous motion
- Some walking adds variety; too much is distracting
- Use gestures that complement your speech's content and are natural for you
- Know what your body language says



Photo courtesy of [malias](#) on Flickr.

Vocal Issues

Volume

- Project to back of room:
support voice from diaphragm

Rate

- Speak at appropriate rate for audience comprehension
- Slow down for especially complex or important content
- Incorporate strategic pauses at key points

Pitch

- Keep pitch of your voice at a natural level
- Avoid “uptalk”



Photo courtesy of [sillydog](#) on Flickr.

Handling Anxiety

- Practice and prepare
- Focus and center yourself
- Breathe
- Have a conversation



Edvard Munch, "The Scream." 1893. Public domain in U.S.

Now What?

- Get acquainted with the research
- Design your slides
- Practice your talk
- Deliver your talk
- Meet to review video and slides

Sources

The Craft of Scientific Presentations

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Purpose, Movement, Color: A Strategy for Effective Presentations

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The Quick and Easy Way to Effective Speaking

- Dale Carnegie, Dale Carnegie Associates, Inc., 1962

The Visual Display of Quantitative Information

- Edward R. Tufte, Graphics Press, 1983

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