

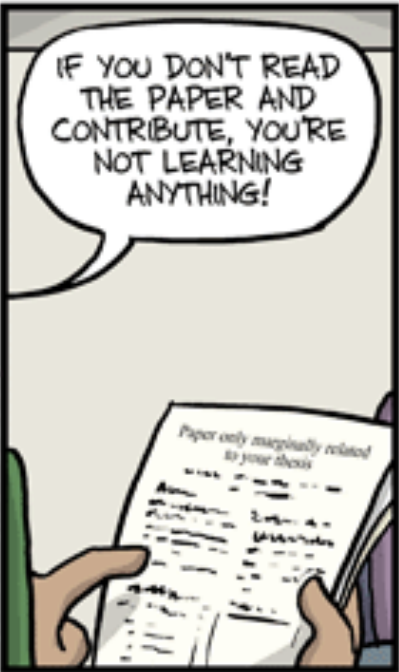
JOURNAL CLUB...

LET'S GO AROUND

I THOUGHT THE MAIN HYPOTHESIS WAS WELL ARGUED BUT THE EXPERIMENTAL METHOD LACKED SOME RIGOR

YES, I THOUGHT THE RESULTS COULD HAVE USED A MORE STRICT INTERPRETATION. ALSO, THE CORRELATION EQUATION

THE, UH... PICTURES LOOK PRETTY.



JORGE CHAM © 2008

If you've been to a journal club, what is it?

For everyone, what do you think a journal club could be good for?

20.109 Communication Workshop 3: Journal Clubs

Sean Clarke & Prerna Bhargava
Spring 2020

<https://mitcommlab.mit.edu/be/>
Helping you communicate effectively.

~~Why do these things called journal clubs?~~

Why eat snacks and talk science?



- Learn how work has been done
- Practice evaluating what might be done differently or next
- Improve YOUR communication

20.109 journal club goals are specific

Show that you understand the paper by presenting clearly:

- the take-home message
- WHY the experiments were done and HOW (**METHODS!**)
- the conclusions drawn

Today, we will cover 3 aspects of presentation prep

1. Craft a story
2. Design effective slides
3. Present your slide deck clearly

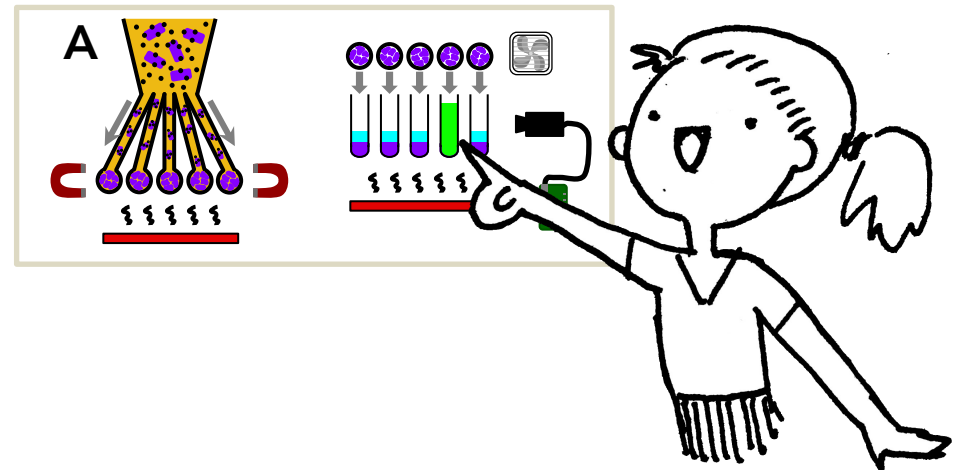


Image: Diana Chien

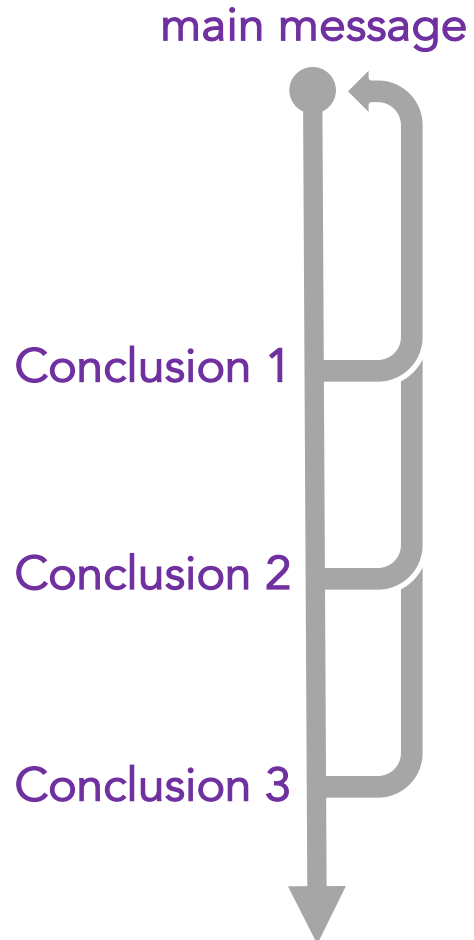
1. Craft a storyline from the paper

“Excellent students tell a story.”


-Noreen

Create a single storyline.

Identify a **take-home message**; everything else leads to it.



Straight chronology is a common trap,
but it's actually confusing.



The authors ligated DNA into a plasmid,
then they transformed it into cells,
then they looked at fluorescence data,
and then they had a calcium sensor.

But why did they do these things?

A story conveys logic & motivation



The authors wanted to engineer a calcium sensor's binding sensitivity.

To change the binding site, they did site-directed mutagenesis,

then they expressed the mutant protein in cells,

and then they assessed its binding properties with a fluorescent assay.

Organize your journal club presentation to **tell us a story**

Take-home message



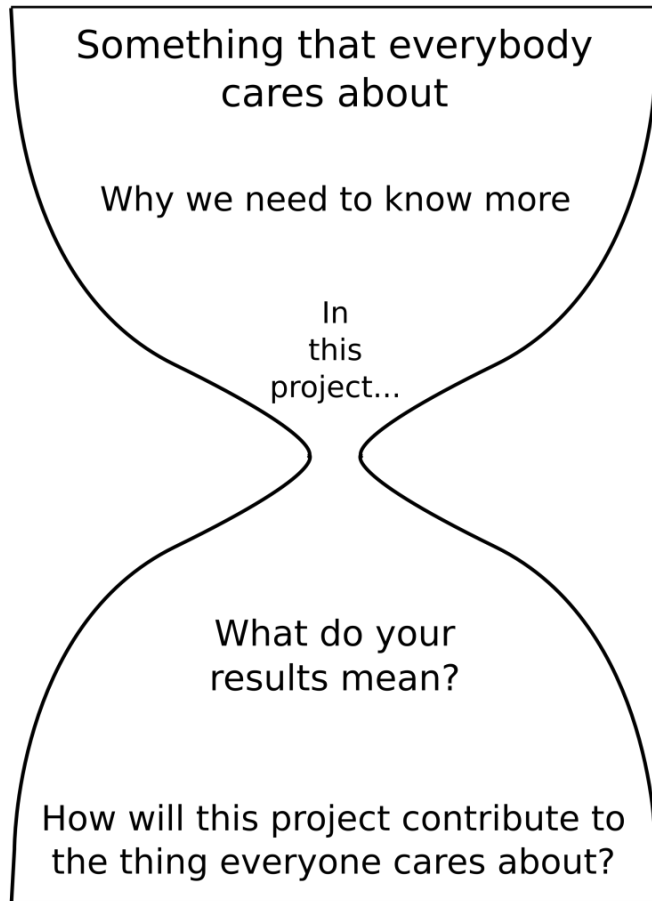
Conclusion 1

Conclusion 2

Conclusion 3

- Identify the **main question/message**
- Include only the **essential** results, key experiments and relevant data
- **Connect** results back to the message
- Explain **logic & motivation** with titles & transitions

The hourglass structure from abstracts helps with this storyline.



General background

Specific background

Knowledge gap, Unknown

HERE WE SHOW...

Results

Implication

Significance

Activity

What storyline would you use for this paper?

www.oncotarget.com

Oncotarget, 2018, Vol. 9, (No. 35), pp: 24122-24139

Research Paper

Etoposide-induced DNA damage affects multiple cellular pathways in addition to DNA damage response

Fengxiang Wei¹, Peng Hao², Xiangzhong Zhang³, Haiyan Hu⁴, Dan Jiang⁵, Aihua Yin⁶, Lijuan Wen^{1,7}, Lihong Zheng⁸, Jeffrey Zheru He⁹, Wenjuan Mei^{10,12}, Hui Zeng^{11,12} and Damu Tang¹²

What content would you include?

Which parts of the figures would you choose to present?

What is their significance to the main question?

2. Design effective slides to convey the story

Good slides are a lot like good figures

“What would help my audience understand this faster?”

If you're not going to talk about something, leave it out.

Make slide **title** a take-home message

Show **minimal essential data**

Maximize **signal-to-noise ratio**

Control time and space by separating, adding, and subtracting the original figures

Effective redundancy: align visual, written, + spoken!

Make slide titles take-home messages

DON'T use

General descriptions of "what"

INSTEAD use

Sentences that answer "so what?"

Method EMK-1 Knockdown

EMK1 was knocked down in MDCK (kidney) cells using siRNA

Results Ca-switch

MDCK cells form a lumen after extracellular calcium changes

Mitochondrial ROS induction in cell lines

Mitochondrial ROS induction is decreased in adk knockout cells

Comparison of primer specificity

Primer 1 is better than Primer 2 at differentiating closely-related HIV strains

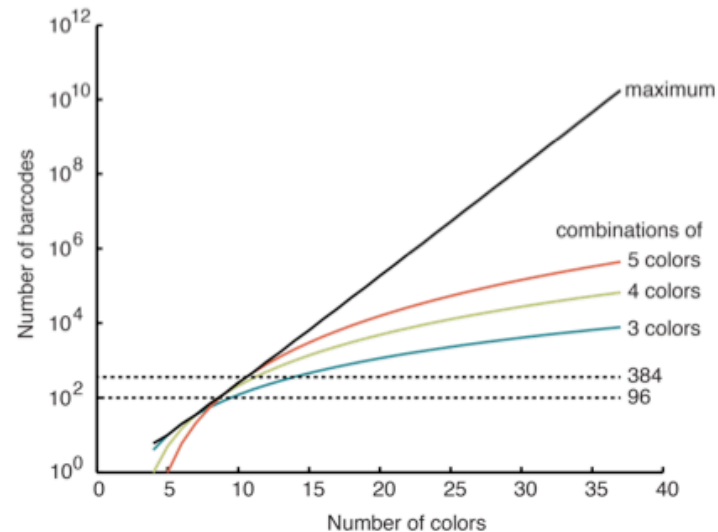
Use all parts of your slide to support your message.

The **title** conveys the "so what"

Optical barcoding scheme is easily scalable to ultrahigh library complexity (>384 combinations)

One message per slide: only include data that supports that message

No unnecessary content: only figures you discuss



Only 9 colors needed for library of 96
Only 11 colors needed for library of 384

Avoid light or bright colors and tiny fonts

Am I legible?

Am I legible?

Am I legible?

Am I legible?

Am I legible?

Am I legible?

Templates are visual noise.

My name - Today - Where we are



PowerPoint basics: 3. Style

Don't drown the audience with data.

Less is more.



Susan McConnell (Stanford),
Designing effective scientific presentations
<https://youtu.be/Hp7ld3Yb9XQ>

Activity:

How would you improve the slides you made?

Think about the tricks we just discussed!

What other modifications are you curious about?

3. Present your story clearly

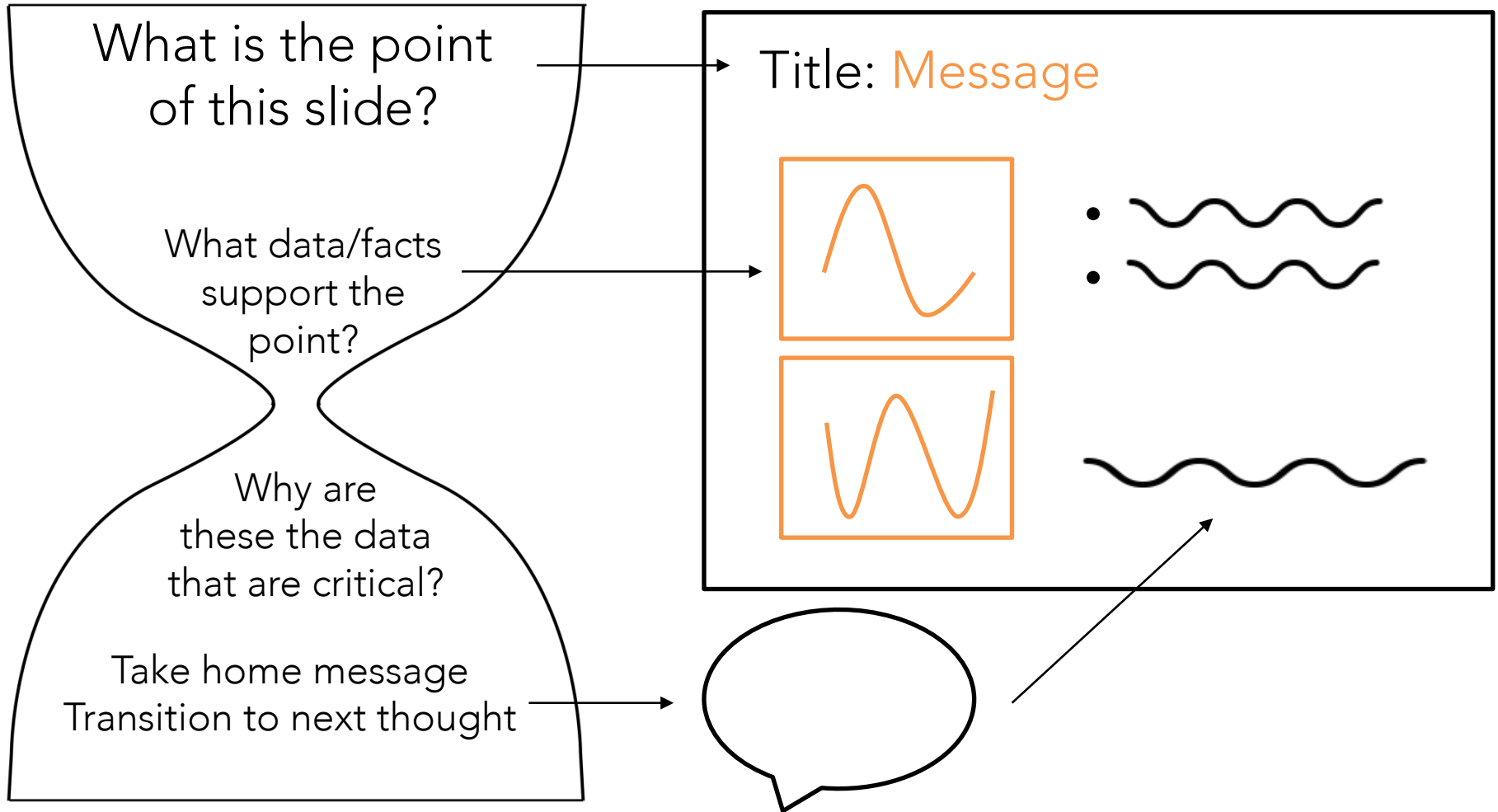
We're a friendly audience, so help us out



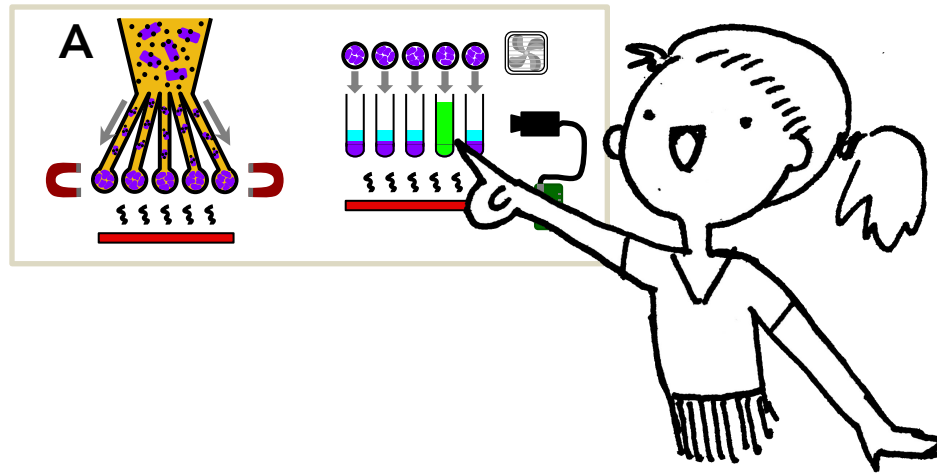
- **Practice** the take-home messages and transitions
- **Record yourself** for **10-minute** timing
- If you're **not** going to talk about it, **take it out**

We'll ask you about **METHODS**

Think about what you'll say with each slide!

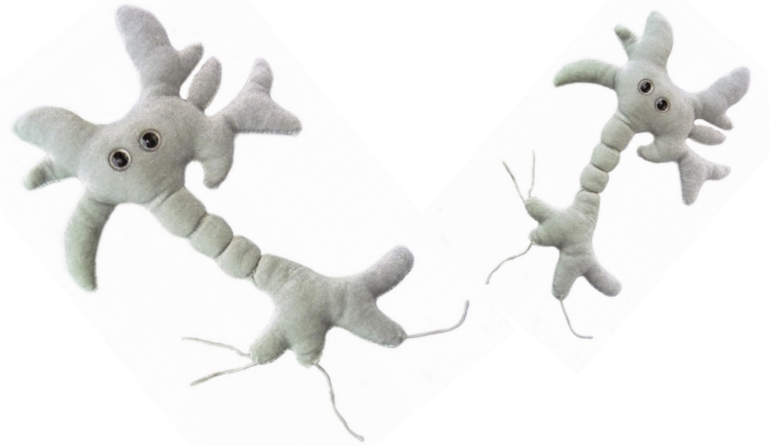


You can also use gestures to guide the audience through complicated data.



Manage nerves by accepting them

Who doesn't get nervous?



Reframe it:

*"I'm nervous because I'm **excited** to present."*

Channel the feeling, don't fight it.

steady belly breathing

eye contact

Be **kind** to yourself.

We have questions, you have answers

Q&A is a critical part of presentations.

Let the questioner finish.

Give yourself time to think.

Make sure you understand the question.

Do your best, use reasoning, but don't guess.

(What goes on the screen?)

Avoid common pitfalls

DON'T

Start so late you don't have time to digest the paper

Be exhaustive
List experiments chronologically

Lose points for time (9.5-10.5 min)

Forget to cite the paper

Say "we did this"

Use illegible labels

DO

Give yourself time to read the paper
2-3 times

Be selective
Tell a story

Practice until you know you can hit the time limit

Include citation in your title slide

"The authors did this"

Use ≥ 20 pt font
Make your own helpful figure labels
Use legible colors

Getting help is a sign of strength!

Ask us if you are unsure or have a different idea

Practice your presentation with a Comm Fellow
<http://be.mit.edu/becommunicationlab>

Watch the rest of

Designing effective scientific presentations
<https://youtu.be/Hp7Id3Yb9XQ>

Susan McConnell, Stanford