

# How to give a good talk: a primer for scientists and physician-scientists

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Sides by Darrell Kotton, Steve Borkan, and Rob Lowe

# Outline

- What makes a good talk? General rubrics
- Tips for Scientists
- Common Pitfalls

# Giving a good talk is hard!

- It is learned
- Takes Preparation and Practice
  - Everyone Can Get Better

# A research talk is important

It is the last of the “three R’s” of communicating research:

- Reading
- Writing
- **Representing**



Each talk (and talker are unique)

There is no one correct way

Coaches tips:

- Be you (your style will be unique)
- Embrace the honor (you have a precious moment of your and others valuable time)
- Adjust to the occasion/audience
  - who is the audience?
  - in person vs. streaming/zoom

Are you listening to me or reading this text, or both?

Visual learners process information  
differently than aural learners:  
try to reach both in your talk  
(such as with this sentence added as text)

# Outline

- What makes a good talk? General rubrics
- Tips for Scientists
- Common Pitfalls

The Best Talks Have Some Common Components  
(not necessarily the slides)

# 20 MOST POPULAR

A person with long blonde hair, wearing a dark t-shirt and dark pants, stands on a wooden stage. In the background, large red 3D letters spell out "TED". A large screen displays a blue and white abstract image. The stage is lit with blue and purple lights, and the audience is visible in the foreground, mostly in shadow.

TED



Listen carefully to good (or bad)  
speakers and ask:  
what makes them good (or bad)?

One example  
Brian Cox: CERN's Supercollider

First 2 minutes of TED  
Brian Cox: CERN's Supercollider



# Techniques Displayed by Brian Cox can be applied to any talk:

- Open body position
- Know your audience and connect!
- Give a talk you would like to hear, tell a story
- Bring emotion, a sense of wonder (beyond the numbers)..... Science is fun!
- Slide images fill the entire screen without clutter
- Slides are props, the real show is the audience+speaker connection
- Practice! Warm up like a theatre performer!

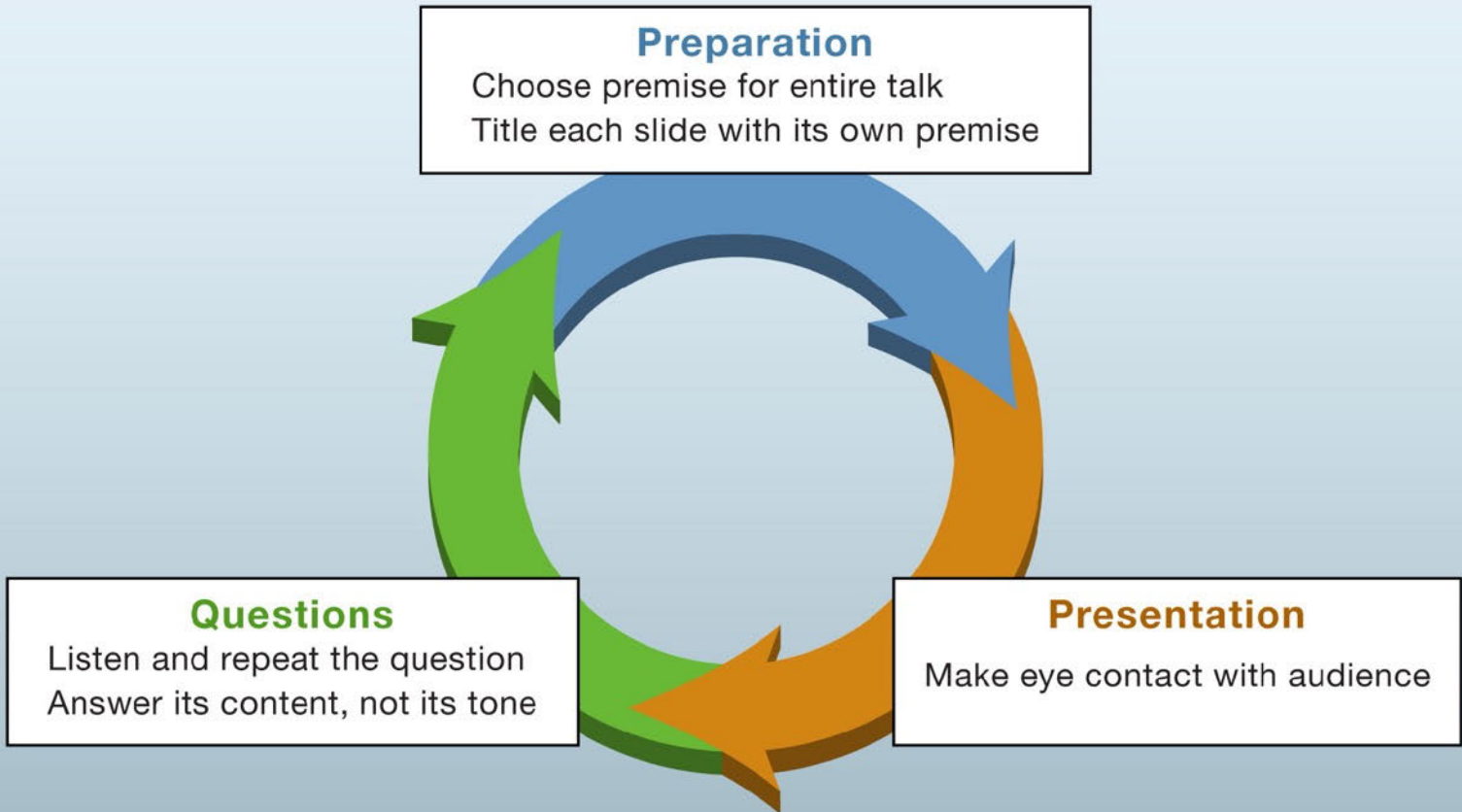
Good speakers know their audience,  
make eye contact, and connect



Anthony Robbins, motivational speaker, Ted.com

Giving a good talk as a scientist

# How to Give a Good Talk



Don't give a talk.

I'd like you to have better speakers

- Better Rules - application of my talk
- Memorization - design and content

There is no "perfect talk" or global feedback

→ Know your audience

- Give a talk you would like to hear (But how do you know - listen carefully)

→ Tell a story

- Audience: Tell me what you're going to tell me
- Tell it
- Tell me what you told them

General for most talks

- Parables for scientists
- Common Pitfalls (

Common Pitfalls

- too much text, reading slides
- irrelevant graphics
- Don't apologize!
- Body position → like the other free your audience
- Saying you wait for feedback/type yourself.

For most talks

- Draw attention, reason
- PREPARE (especially 2 minutes)

You connect with audience  
Slides are just props.

Outline in slides 1 -

- 7 lines of text at the end; 2-3 thanks/tin

Complete sentence title (handwritten format)

• example

20 Point Expert

• When you go over time (sum to 10 for 6's)

PREPARE FOR SCIENTISTS

- TALKS ≠ PAPERS.
- SLIDES ≠ FIGURES.
- MAKE THE AUDIENCE (example) DO THE EXPERT. (presets make).
- Summary slide (example).

BETTER BETTER

- Ask for FEEDBACK.

THE HIGHER LEVEL → Ask something of your audience

- First I asked:  
“Who is my audience?”
- My premise came next
- I put myself in your shoes:  
you were my inspiration
- I outlined sections
- The slides took some work!  
Premise for each slide
- I practiced

I didn't make some of these common mistakes (this time):

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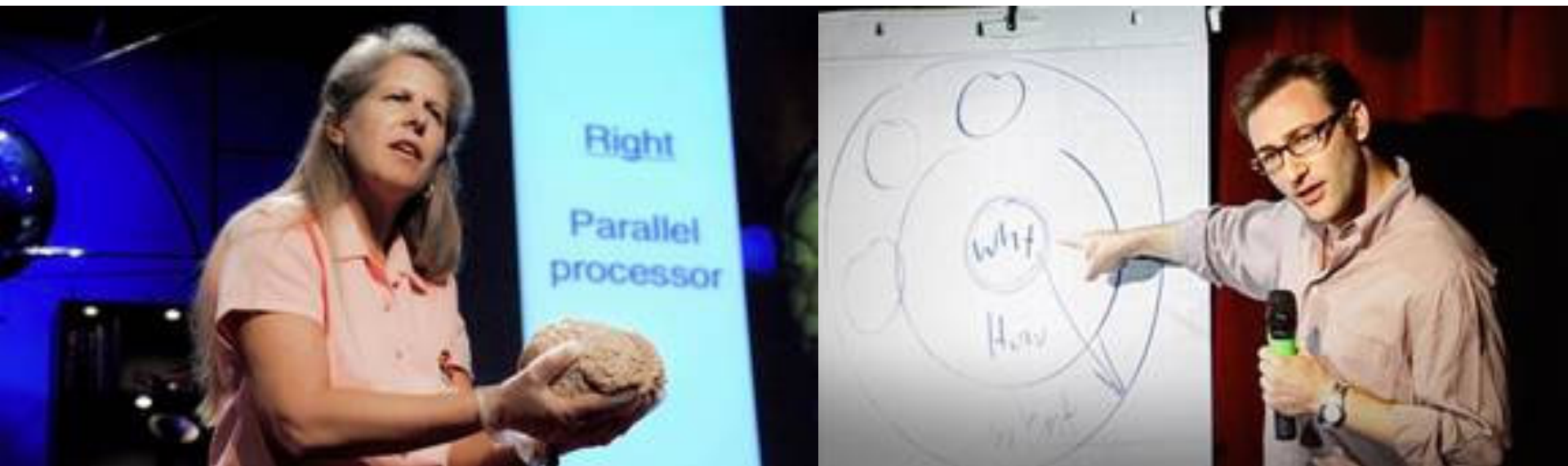
I didn't stay late in the lab trying to get that last piece of data

Instead I made an outline, slides, and rehearsed the beginning

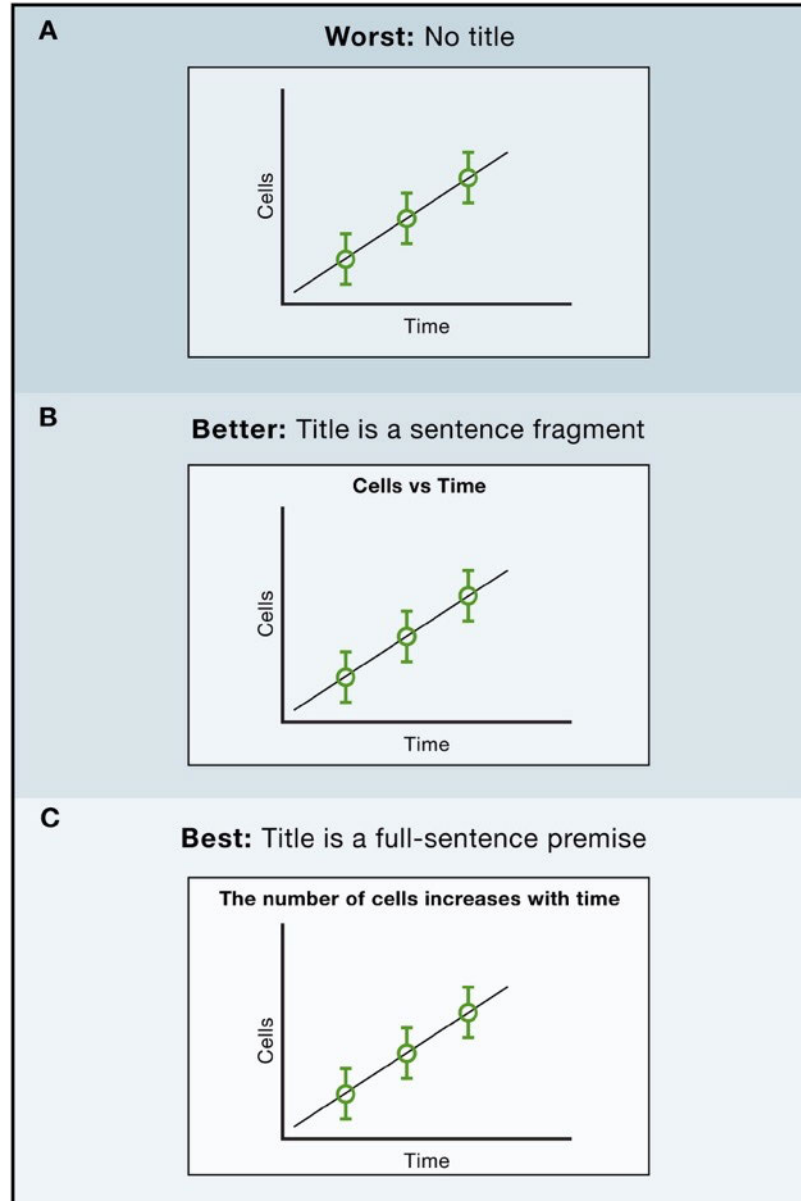
I kept my intro short (10% of total time on intro)



# How to use props: Chalk talks vs slides



Good Slides have a title that communicates a premise as a full sentence



# Slide guidelines for most talks

- 28 point font (seen in the back of the room)
- 7 lines of text maximum
- 6 words per line
- Title of each data slide as a complete sentence
  - A Teachable moment
- Never go over time! (1 slide= 1 minute)
- A short outline as slide 1

# Capture All 3 Teachable Moments

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- Tell ‘em upfront (*intro*)
- Tell ‘em during talk (*title and phrases*)
- Tell ‘em again (*summary*)

# Special algorithm for scientists

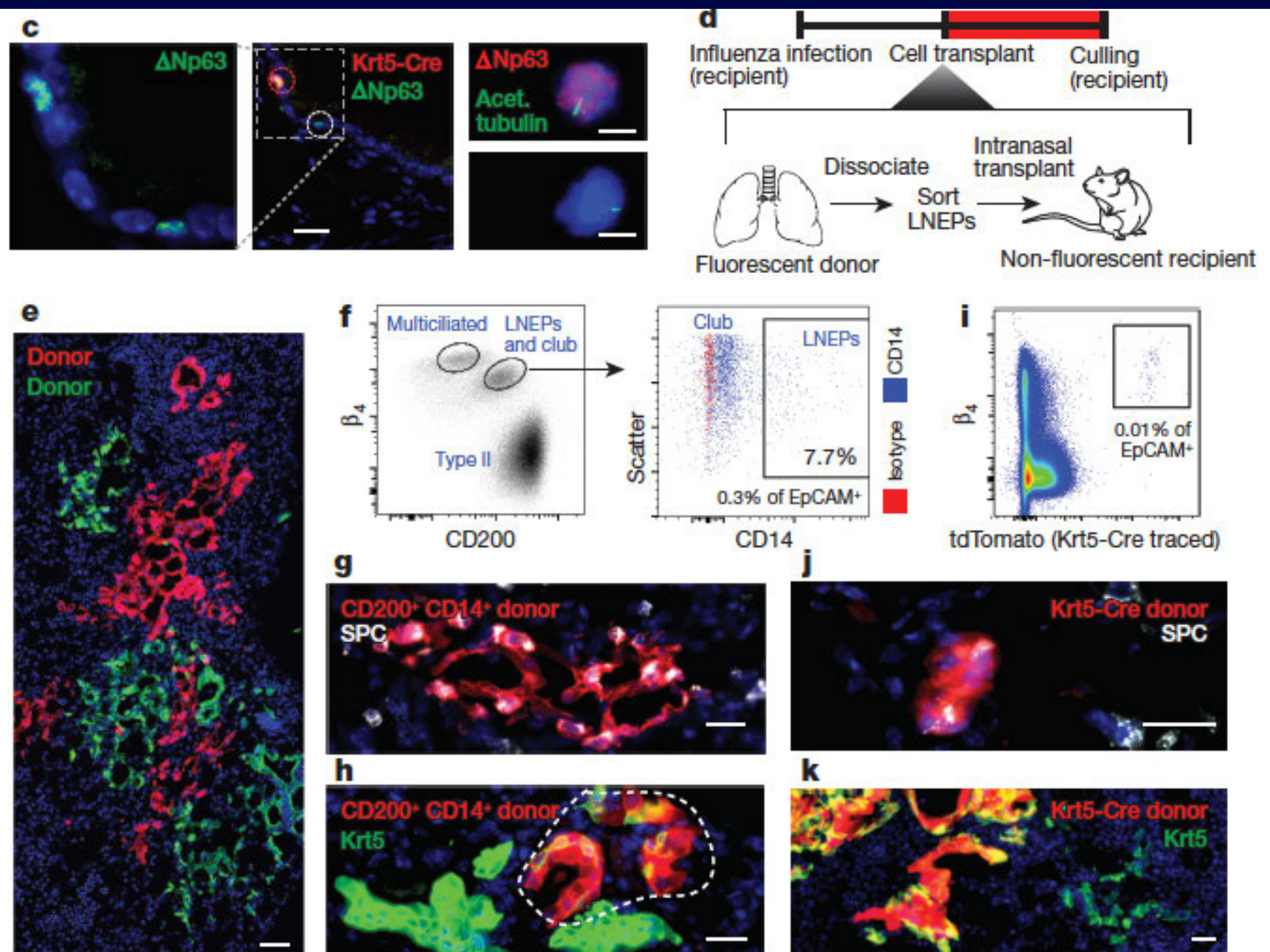
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- Tell 'em the question/hypothesis (*intro*)
- Tell 'em the experimental method (*title and phrases*)
- Present result and interpret the data (*Premise with title; teachable moment*)

# Good speakers remember these points

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- Talks  $\neq$  Papers
- Slides  $\neq$  Figures
- Pictures are better than text



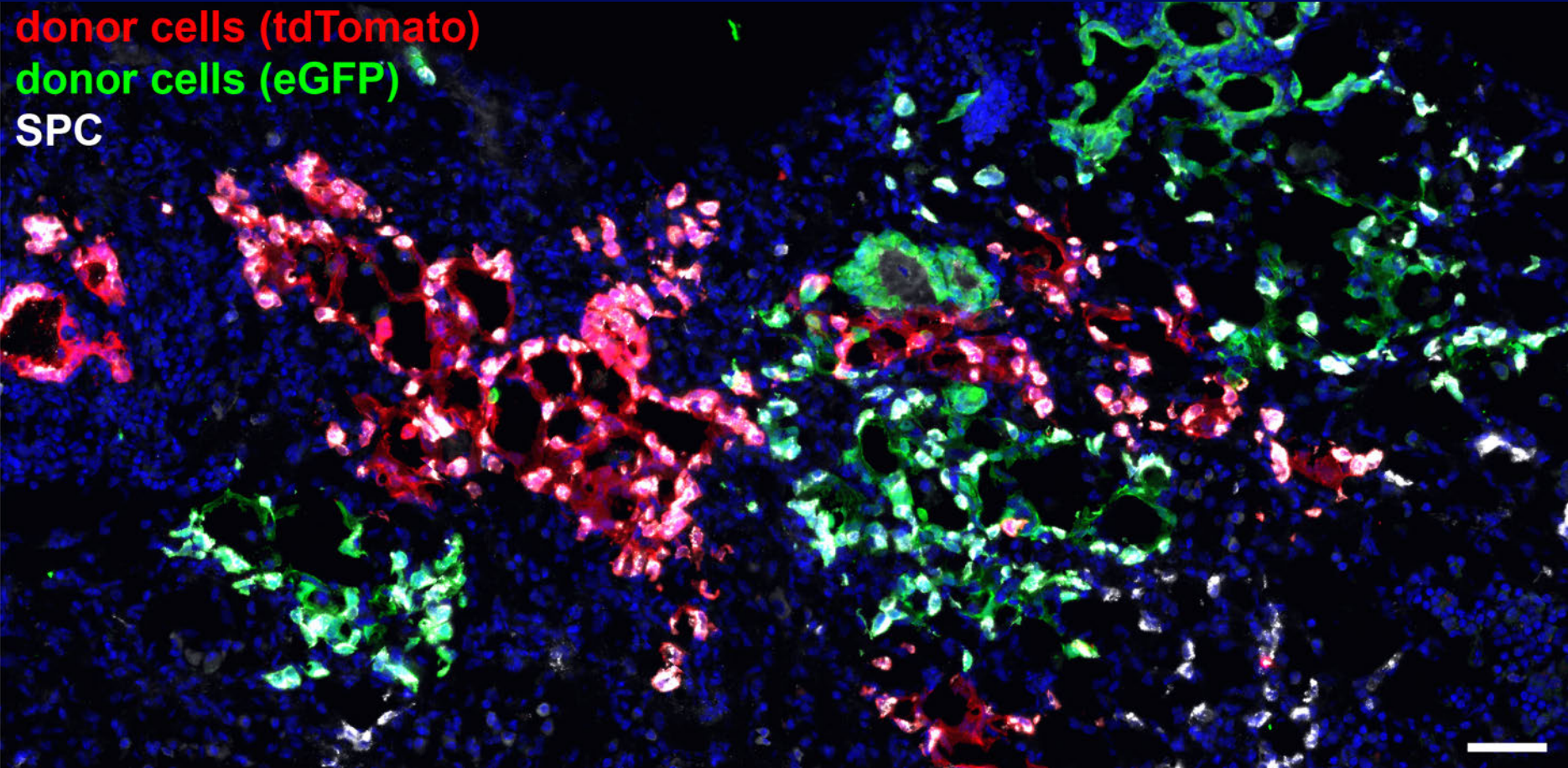
Lineage-negative progenitors mobilize to regenerate lung epithelium after major injury.

Vaughan, Chapman et al. Nature. Dec 24<sup>th</sup>, 2014



# Injected lung progenitors engraft and reconstitute the lung epithelium after influenza-induced injury

donor cells (tdTomato)  
donor cells (eGFP)  
SPC



Vaughan, Chapman et al. Nature. 2014

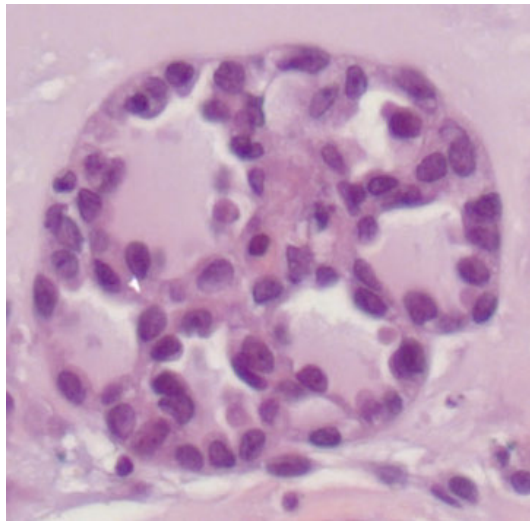


# Good speakers care about their audience

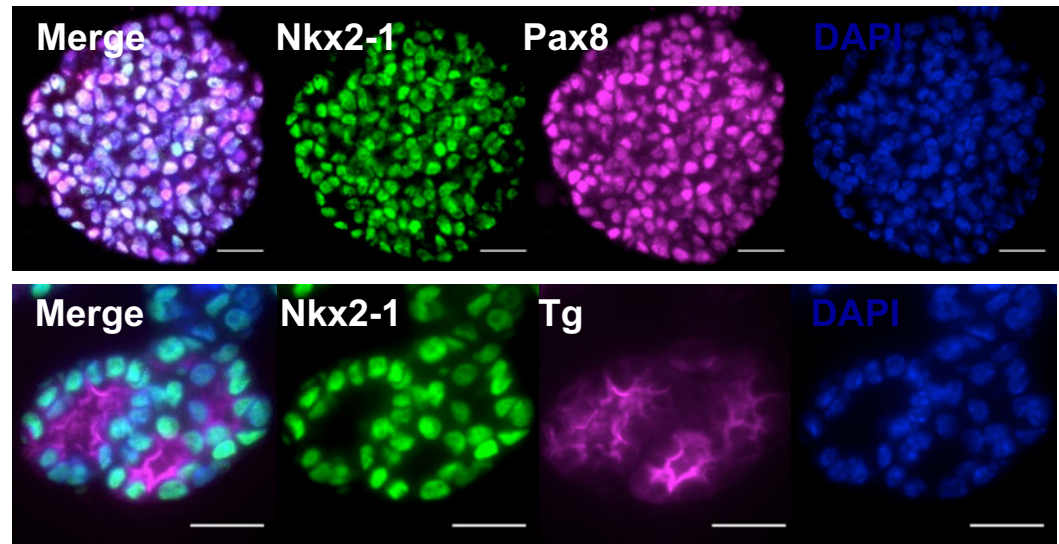
- “Remember how much the audience doesn’t know—and how pleasant it is to hear about known and clear issues. “
- “Preparing a clear talk with clear slide premises is an act of nurturing and appreciation toward your audience”

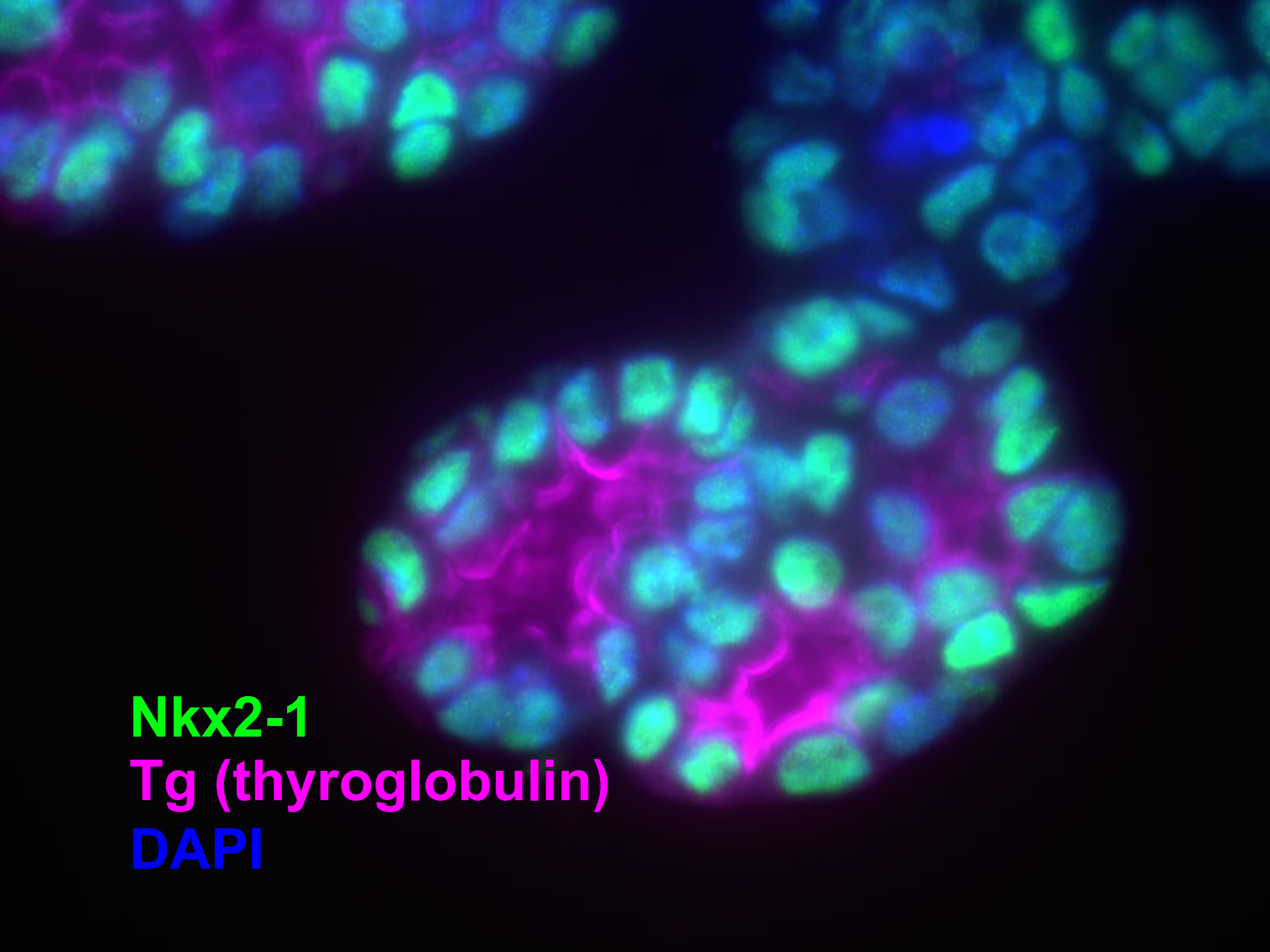
— Uri Alon. Molecular Cell, 2009

# Sorted embryonic stem cell-derived Nkx2-1<sup>+</sup> foregut cells Can be matured into thyroid follicular epithelium in 3D culture



Stem cell-derived thyroid  
Organoid after TSH





**Nkx2-1**

**Tg (thyroglobulin)**

**DAPI**

# Finding inspiration for preparing your talk

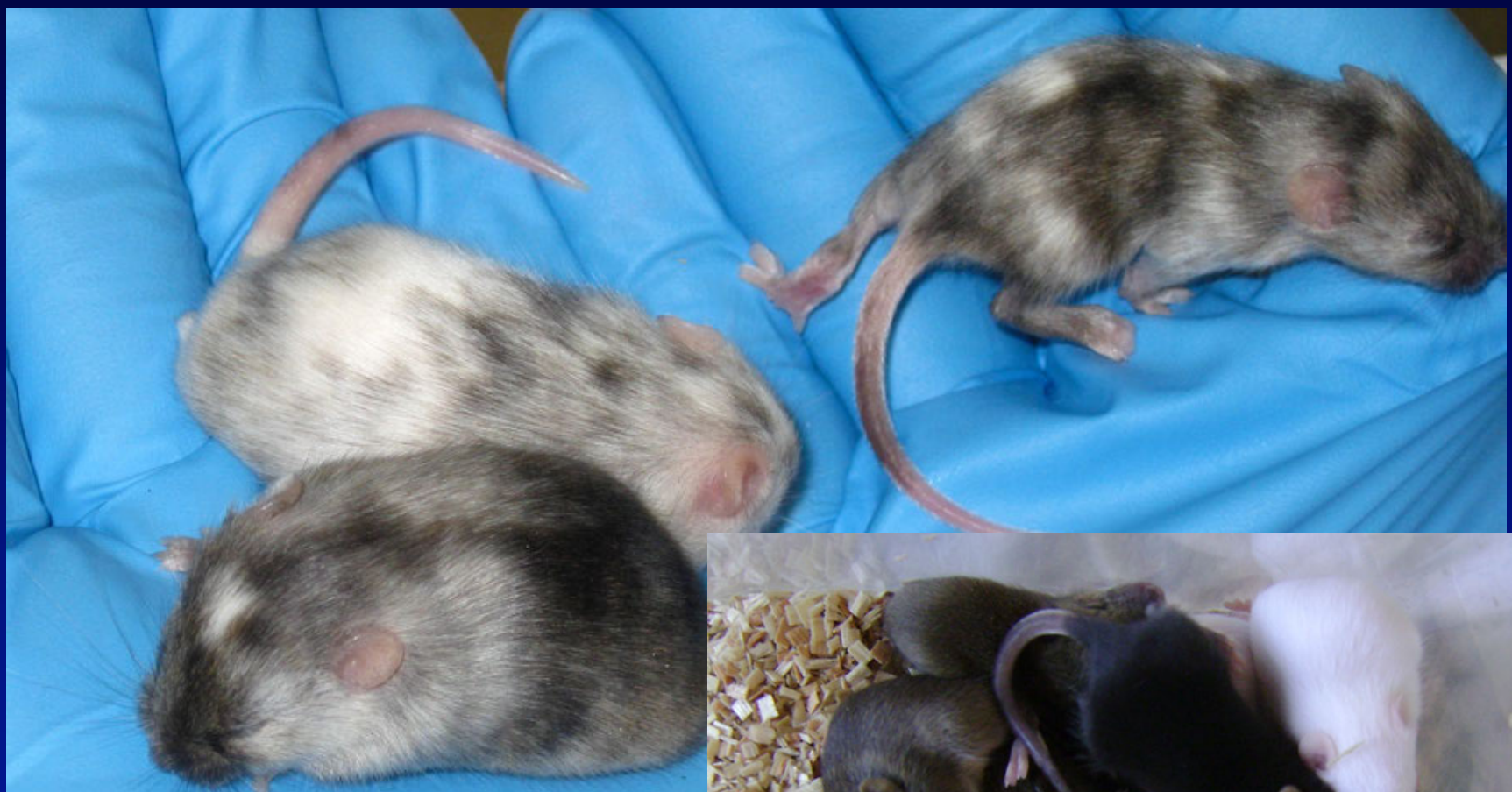
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“Remember how your research originated from your sense of wonder about a phenomenon. Tension rises as you describe the gap in our knowledge, foreshadowing the discovery. Then, there is a second wonder: “Ahh, that is what the answer looks like” (these two wonders were described by Aristotle).”

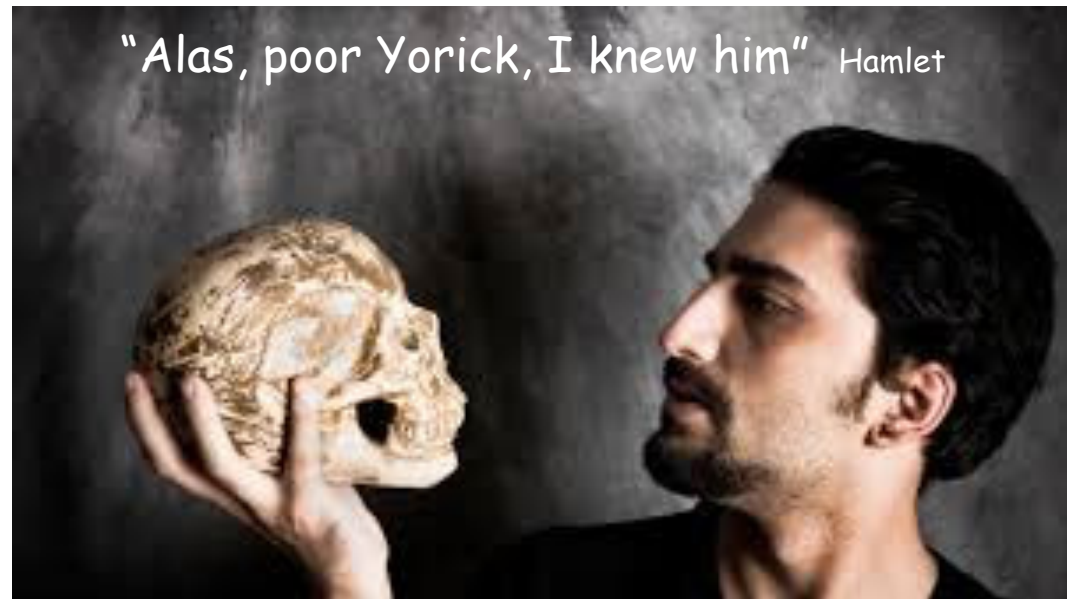
Blastocyst transplantation allows functional testing of the pluripotency of candidate iPS cells







Sommer C. Stem Cells 2009



Presenting as theatre with suspense

Get to know Powerpoint's Presenter Mode

Have the audience do the experiment with you



## Improve your presentations



- Why use Presenter view?
  - time information
  - preview of next slides
  - personal slide notes
- How do you use it?
  - enable extended desktop
  - select presenter view checkbox
  - enjoy the privilege of having your own screen



Slide: 2 of 3

Time: 04:35

10:35

Zoom:



Simply use slide notes to add important reminders or key bullet points with information that will help you deliver a better presentation to your audience.

1

## Improve your presentations

Andraz Piletic, CCSI, CCNP

Podnikovna Komunikacija  
Osoba (Communications)

2

## Improve your presentations



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3

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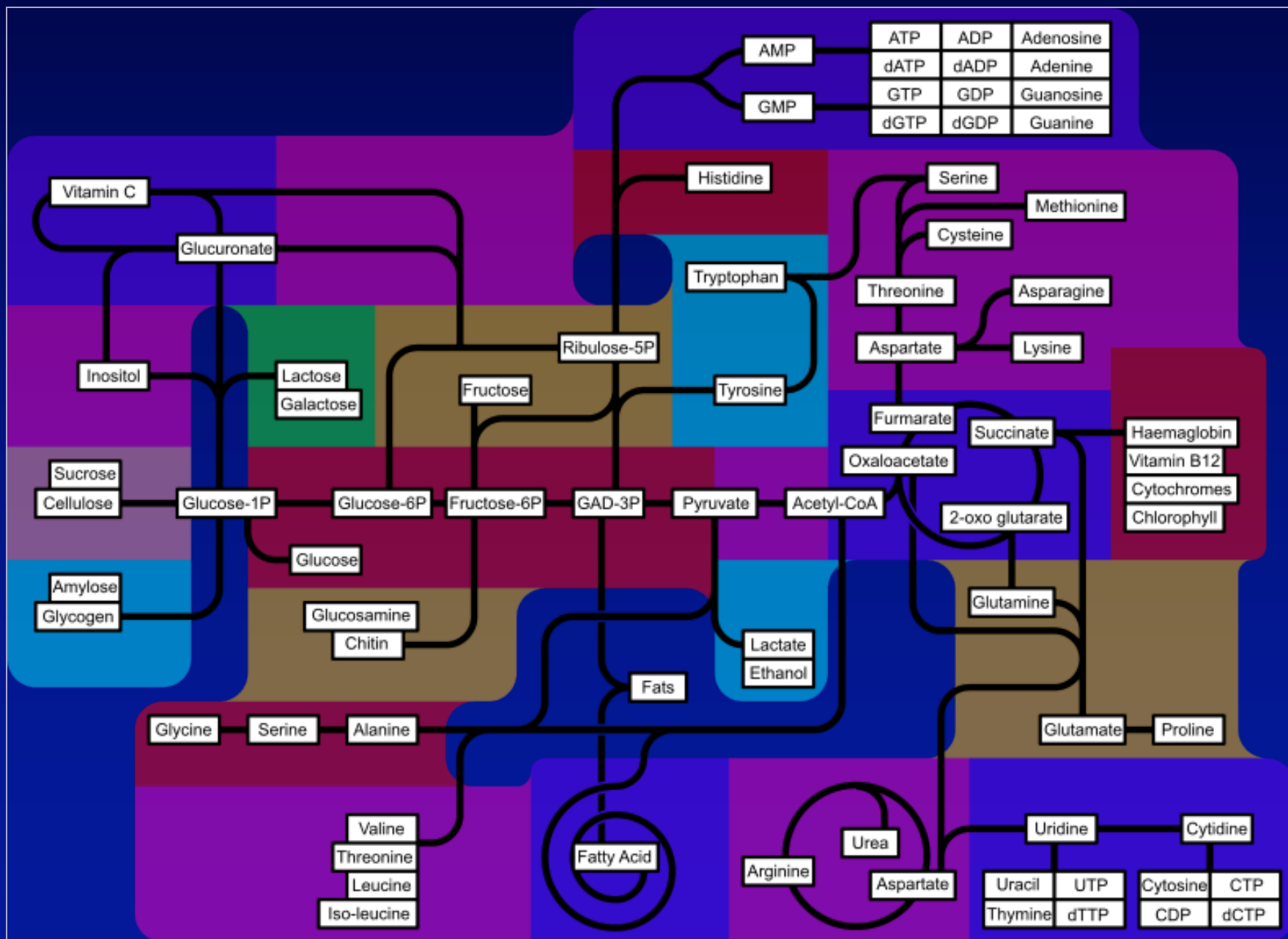
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# Effective Data Slides should be *Simple and Clear*

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- Show key results only
- Simple, uncluttered
- Use animation to build your story
- Avoid easy way out! (e.g., “*Pathway Slide*”)



# Common Pitfalls

- Apologies: “I’m sorry I ran out of time”
- Too much text, reading slides
- Irrelevant Graphics →
  - If it is on the slide talk about it
- Body position
- Saying “Um” (tape yourself)
- Failing to rehearse the first 2 minutes/slides
- Going over time



# The Strong Finish

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- Energize!
- *Provide simple take away message*
- Summarize key points (*mirror introduction*)
- Use a pithy quote
- Call to action
- Inspire or challenge



# CReM

CENTER FOR REGENERATIVE MEDICINE

“Never doubt that a small group of thoughtful, committed people can change the world. Indeed, it is the only thing that ever has.”

Margaret Mead

# Handling questions

- Make eye contact
- For beginners: repeat the question
- Wait for it!
- The first answer is important. It sets the tone.
- Mix it up, long and short answers
- Address the content, not the tone.
- Feel free to say “I don’t know,” or “I didn’t think of this before.”



# How to handle stage fright

- Being nervous is normal!
- Resist the normal urge to hide:
  - In your slides or text
  - In your body position
- Rehearse the first 2 minutes and 2 slides
- Make eye contact and open your body:
  - Your audience wants you to succeed
- Find a friendly face



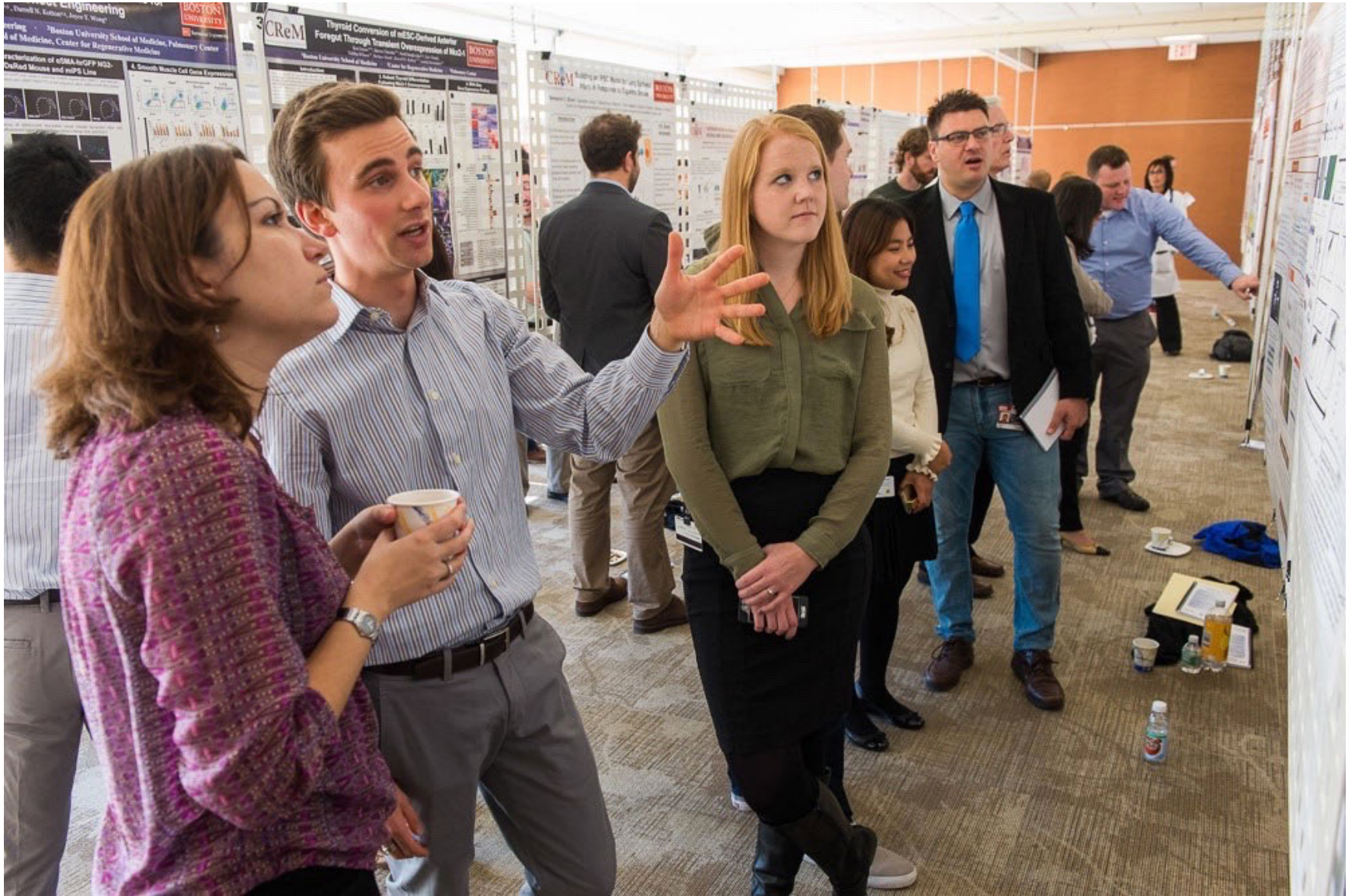
# How to get better: Now that your talk is done

- Ask for feedback
  - “What worked in my talk?”
  - “What could have been better?”





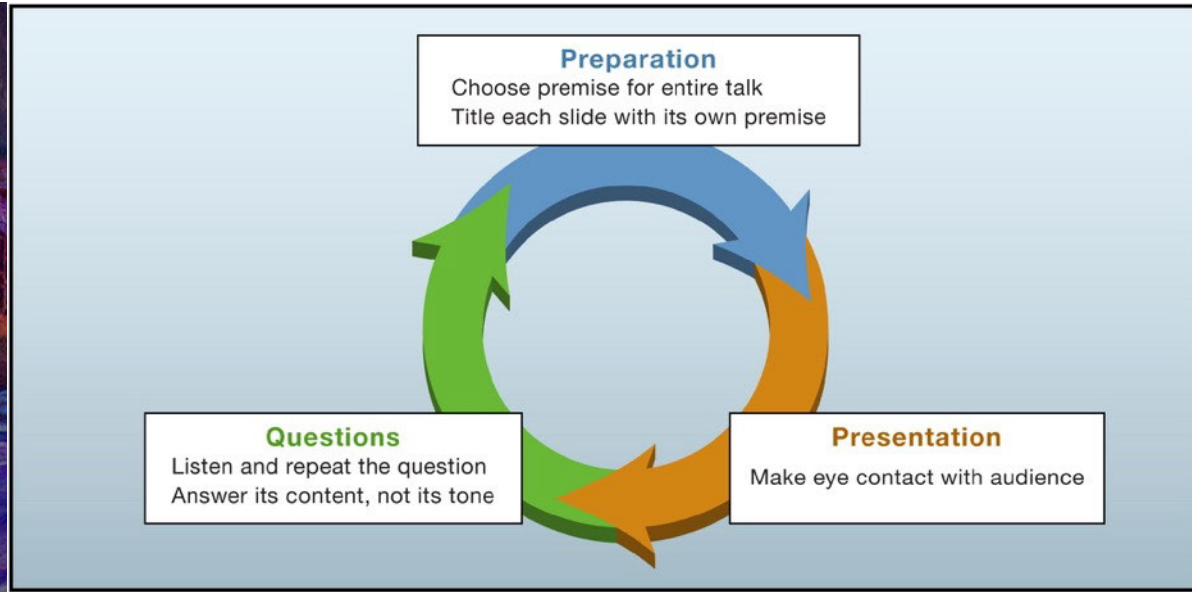
When you explain your poster, you are actually giving a 1-2 minute “mini-talk” over and over, with “time for questions” sometimes representing the majority of your time. Remember the rest of the audience around you is listening too!





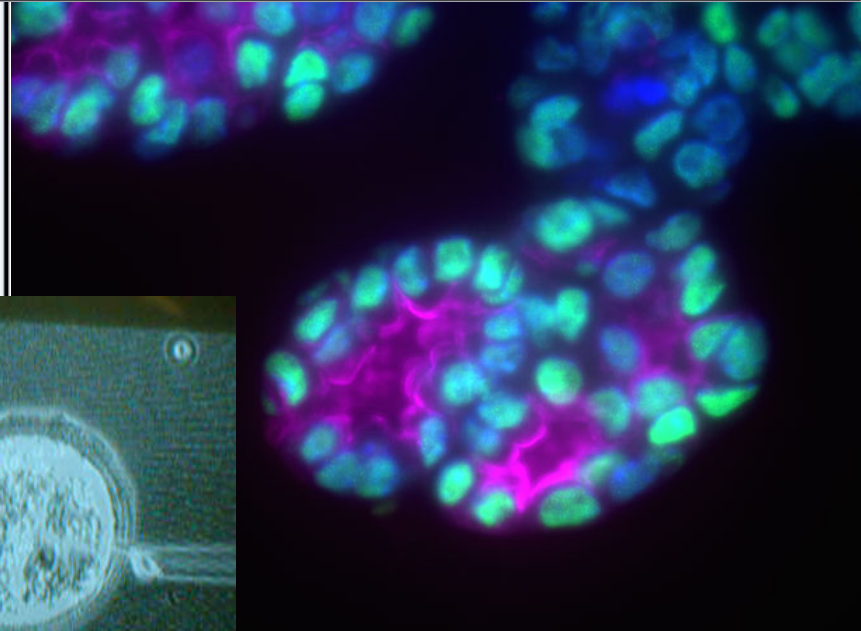
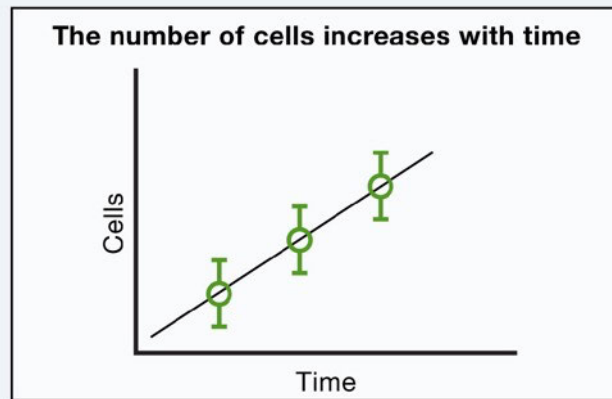


# Summary



C

**Best:** Title is a full-sentence premise



Pitfalls, Handling Questions, Getting Better.....

# Special Thanks

Thanks to all our trainees over the years who continue to teach us all how to give good talks!



School of Medicine



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