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

One example

Brian Cox: CERN’s Supercolider
First 2 minutes of TED
Brian Cox: CERN’s Supercolider
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

Preparation
Choose premise for entire talk
Title each slide with its own premise

Questions
Listen and repeat the question
Answer its content, not its tone

Presentation
Make eye contact with audience
My plan for this talk started on paper

- 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):

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

A  
**Worst: No title**

B  
**Better: Title is a sentence fragment**

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

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

Side courtesy of Steve Borkan and Rob Lowe
Special algorithm for scientists

- 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

• Talks ≠ Papers

• Slides ≠ Figures

• Pictures are better than text
Lineage-negative progenitors mobilize to regenerate lung epithelium after major injury.

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

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+ foregut cells can be matured into thyroid follicular epithelium in 3D culture.

Anterior Foregut Endoderm

Day 6

BMP4
FGF2

Nkx2-1+
Thyroid

Day 12

TSH

Day 30

Stem cell-derived thyroid Organoid after TSH
Nkx2-1
Tg (thyroglobulin)
DAPI
Finding inspiration for preparing your talk

“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).”

Uri Alon. Molecular Cell 2009 36, 165-167 DOI: (10.1016/j.molcel.2009.10.007)
Blastocyst transplantation allows functional testing of the pluripotency of candidate iPS cells
Presenting as theatre with suspense

Get to know Powerpoint’s Presenter Mode

Have the audience do the experiment with you

“Alas, poor Yorick, I knew him” Hamlet
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

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.
Effective Data Slides should be Simple and Clear

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

Slide courtesy of Rob Lowe, Steve Borkan
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

• Energize!

• *Provide simple take away message*

• Summarize key points (*mirror introduction*)

• Use a pithy quote

• Call to action

• Inspire or challenge
“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

20 MOST POPULAR TED

Preparation
Choose premise for entire talk
Title each slide with its own premise

Questions
Listen and repeat the question
Answer its content, not its tone

Presentation
Make eye contact with audience

Best: Title is a full-sentence premise

The number of cells increases with time

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!

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