NOT A TALK

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Disclosures

■ Not one “right” way to give a talk...

■ ... many bad ways ...

■ Some very dogmatic people out there [howtogiveatalk.com]

■ This talk reflects my own opinions
Overview

■ General Principles

■ Your Slides

■ Your Presentation Style
GENERAL PRINCIPLES
Entertainment Trumps Knowledge

“There is one big misunderstanding when giving talks. Most people think they need to be smart, show a lot of data, share knowledge and bore the crap out of the audience ... But you know what? If I want to learn something new, I read a book, but I go to a talk to get entertained.

from “Desk of Van Schneider” – July 18, 2016
“I see presenting as a harmonious blend of passion, storytelling, and showmanship. It has the uncanny ability to change minds and hearts in a few brief moments. And it’s a practice that challenges and terrifies me, but I find tremendously rewarding when done right.”
A really bad presentation needs careful preparation
  - prepare for the wrong audience
  - give an overcomplicated presentation
  - prepare a presentation that is the wrong length
  - ignore the topic you are given

Don’t use abbreviations without first defining them!!!
Bad slides are the traditional standby of a bad presentation

- There must be far too many
- They must be too small for even those in the front row to read
- Flash them up as fast as you can
- Ideally there should be little connection between what you are saying and what is on the slide
13 Most Common Mistakes People Make When Giving a Speech

How to Make Sure Your Talk Doesn’t Suck

David Tong
Ways in which you can suck

In case it’s not obvious, what follows are examples of what not to do
Death By Powerpoint

■ Key contributors:
  – confusing graphics
  – slides with too much text
  – presenters whose idea of a good presentation is to read their slides out loud

■ Easily recognized by:
  – glazed over audience
  – furtive use of smartphones
  – frequent trips to the bathroom
"We Have Met the Enemy and He Is PowerPoint"

By ELISABETH BUMILLER

APRIL 26, 2010

"Creates illusion of understanding"
Gen. HR McMaster
April 2010

A PowerPoint diagram meant to portray the complexity of American strategy in Afghanistan certainly succeeded in that aim.
Effective Powerpoint Use

- Use technology as a visual aid to **enhance** what is being said

- Don’t rely on technology to serve as focus
TEDx Talk: “How to Avoid Death by Powerpoint”

- One key message per slide
- No more than six objects/lines
- People naturally focus on
  - **SIZE**
  - **contrast**
  - **motion**
  - signaling colors: *red*, *orange* and *yellow*
Your Audience

■ Why are you giving the talk?
  – Meeting Platform?
  – Job Talk?
  – Didactic Lecture?

■ Who is the audience?

■ How much do they know about my topic?
Assume the Audience is Omniscient

Introduction

As you all know, the remarkable Kontsevich-Soibelman wall-crossing formula is given by

\[
\frac{d}{du} \left( \prod_{-Z_{\gamma}(u) \in \mathcal{V}} \mathcal{K}_{\gamma}^{\Omega(\gamma; u)} \right) = 0
\]
Tell A Story

■ “There’s a reason why we can sit motionless in a movie theater for two hours, completely enamored by what we’re watching. Movies follow a great story arc that builds suspense and intrigue.”

■ Create anticipation that keeps viewers looking forward to what happens next
Tell A Story

■ Establish emotional connection
■ Grab attention of people whose minds – or fingers – are wandering
Tell A Story

■ Present a problem ("what is")
  – *Give lots of background!!!!!!*

■ Build towards a solution ("what could be")

■ Problem-tension-solution pattern
  – *based on classical Greek dramas*
  – *effective in eliciting powerful emotion response*
Title

- Choose an interesting title that would make you want to hear about the topic
The Role of CALM Translocations in Leukemogenesis

Dan Wechsler, MD, PhD
Pediatric Hematology-Oncology
Duke University
June 2011
LIFE of PICALM:
Adventures in Understanding Pediatric Leukemias

Dan Wechsler, MD, PhD
Pediatric Hematology-Oncology
Duke University Medical Center
April 2015
PRINCIPLE #1: AUDIENCE ENERGY
The Science of Scientific Writing

George D. Gopen [Duke]

“If the reader is to grasp what the writer means, the writer must understand what the reader needs”

American Scientist (Nov-Dec 1990), Volume 78, 550-558
“Reader’s Energy”

■ Readers (reviewers) have only a certain amount of time and energy to devote to a written work

■ If they have to work too hard ...
  - to find the message, it will be missed
  - to get through the proposal, they will resent it
A Reviewer’s Nightmare!

A particularly tractable model in experimental manipulations—indeed, by transgenic ports of the stomach into the abdomen (Verner and Wilson, 1985; Nishizaki et al., 1994) in ethylene-induced rats. This proliferation of fibroblasts, a particularly tractable model in experimental manipulations—indeed, by transgenic ports of the stomach into the abdomen (Verner and Wilson, 1985; Nishizaki et al., 1994) in ethylene-induced rats.
Much Better!

Sensory nociceptor neurons are likely targets for estrogen’s effects on target innervation density. Studies show that sensory ganglia contain abundant estrogen receptors (ERs) (Sohrabi et al., 1994; Papka et al., 1999; Taleghany et al., 1999; Papka and Storey-Workley, 2002; Papka and Mowa, 2004). Estrogen upregulates neurofilament expression in DRGs (Scoville et al., 1997), suggestive of axon outgrowth, and elicits axon outgrowth in PC12 cells expressing ERs (Gollapudi and Oblinger, 2001). Therefore, previous work provides a strong basis for suggesting that estrogen may induce outgrowth of some types of axons, including sensory nociceptors.

**Estrogen and arteriolar nociceptor hyperinnervation**

Our preliminary findings confirm that estrogen does affect vascular innervation, leading to hyperinnervation by CGRP-ir axons. In the mammary gland, sustained hyperinnervation is associated with increased numbers of CGRP-ir sensory axons, that are increasing in number and size, and that they are associated with arteriolar vessels (Blacklock and Smith, 2004). Because arteriolar blood flow increases by increased total innervation revealed by the pain peptide CGRP, increased CGRP-ir innervation must be due to axon sprouting rather than axon splitting, which requires a stable number of fibers. This increase in arteriolar innervation may play a role in the regulation of blood flow to the vascular system. Indeed, CGRP-ir arteriolar innervation is also increased in the veins (mesenteric) vascular beds (Blacklock et al., 2004), suggesting that estrogen may be highly selective for arteriolar targets, as it does not consistently affect large (C3) arterioles, or veins, or large arteries (C2) (Blacklock et al., 2004; Smith, 2004). The increase in arteriolar vasoconstriction is important in understanding why estrogen reduces blood pressure in postmenopausal women (Kotchen et al., 1982; Martins et al., 1983).

Sensory axon sprouting in the mammary gland may be the result of increased sensitivity and neurogenic recruitment by estrogen, which may reflect estrogen action and thereby estrogen alters pain sensitivity and neurogenic inflammation, which may reflect estrogen action and thereby estrogen alters pain sensitivity and neurogenic inflammation, which may be important in more fully defining the effects of estrogen on sensory innervation, and neurogenic inflammation. Estradiol may affect pain sensitivity.

**Neurotrophic mechanisms in sensory nociceptor hyperinnervation**

Target innervation is regulated by limited amounts of tissue-derived neurotrophic factors, and most CGRP-ir nociceptors are dependent upon NGF for trophic support (Levi-Montalcini and Angeletti, 1962; Lewin and Mendell, 1993; Maness et al., 1994). These tRNA-expressing neurons are likely to be affected by estrogen. Thus mRNA for the estrogen receptor beta (ERβ), which is widely expressed in small, medium, and large axons, and ERα is primarily expressed in small axons (<600 μm²; Sohrabi et al., 1994; Yang et al., 1996; Taleghany et al., 1999; Papka and Storey-Workley, 2002), which is likely to represent the C-fiber nociceptor population. Further, tRNA and ERs co-localize in DRG neurons, suggesting that estrogen may regulate the expression and function of these receptors (Toran-Allerand et al., 1988). In fact, tRNA mRNA expression in DRG apparently is regulated by estrogen (Sohrabi et al., 1994; Liuzzi et al., 1999; Lantua et al., 2001a, b). However, despite evidence for an association between estrogen and tRNA, our preliminary studies failed to show any interaction between estrogen and NGF with respect to neurite outgrowth in culture. Similarly, estrogen is known to increase target expression of NGF (Björling et al., 2002; Krizsan-Agbas et al., 2003). DRG explant cultures did not show increased sprouting in the presence of mesenteric arteriolar targets in defined medium containing estrogen (C-4I) (Blacklock et al., in press). Therefore, it seems unlikely that estrogen is inducing nociceptor hyperinnervation through actions on NGF or its receptors.
“Audience Energy”

- Audiences have only a certain amount of energy to devote to a **presentation** before they get **bored** and...

- If they have to work too hard ...
  - to find the **slide’s** message, it will be **missed**
  - to get through a **slide**, they will **resent** it
PRINCIPLE #2:
COGNITIVE LOAD THEORY
Cognitive Load Theory

■ The brain can only do so many things at once

■ Hard to process information in written and spoken form simultaneously

■ When you see a slide filled with text, it’s natural to try to read it

■ Listeners can read the slides or listen to you, but they can’t successfully do both
Cognitive Load Theory

“Mr. Osborne, may I be excused? My brain is full.”

MY BRAIN HAS TOO MANY TABS OPEN!
Cognitive Load Theory

- **Clutter:**
  - Extraneous words
  - Graphics
  - Animation
  - Sounds
  - Fancy transitions
  - Things flying across the screen

- All these *strain* the audience’s cognitive resources
Get as Much on That Page as Possible
(and speak really fast)
Remember – No more than 5-6 Bullets

10 dots 2 sec
7 dots 1.2 sec
5 dots 0.2 sec
max. working memory load:
4-5 things
YOUR SLIDES
You Control Your Slides

■ You choose what to include/not include on them

■ You decide how many slides - that “one slide/minute rule?"

■ You can selectively highlight what’s important and guide audience
Adipocyte-Secreted Factors Compromise Mouse CD8+ T-cell Cytokine Production

<table>
<thead>
<tr>
<th></th>
<th>Unstimulated</th>
<th>Unconditioned</th>
<th>Stromal CM</th>
<th>Adipocyte CM</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD44 %</td>
<td>16.5 %</td>
<td>63.0 %</td>
<td>63.2 %</td>
<td>13.0 %</td>
</tr>
<tr>
<td>IFN-γ %</td>
<td>5.3%</td>
<td>66.0%</td>
<td>69.0%</td>
<td>29.0%</td>
</tr>
<tr>
<td>TNF-α %</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Adipocyte-Secreted Factors Compromise Mouse CD8+ T-cell Cytokine Production

Unstimulated    | Unconditioned      | Stromal CM          | Adipocyte CM

**CD44**
- Unstimulated: 16.5%
- Unconditioned: 63.0%
- Stromal CM: 63.2%
- Adipocyte CM: 13.0%

**IFN-γ**
- Unstimulated: 5.3%
- Unconditioned: 66.0%
- Stromal CM: 69.0%
- Adipocyte CM: 29.0%

**TNF-α**
- Unstimulated: 41.0%
- Unconditioned: 69.0%
- Stromal CM: 72.7%
- Adipocyte CM: 39.0%
Our Accomplishments

- Ranked No. 8 in the Country for Pediatric Cancer by U.S. News & World Report
- We care for more than 7,400 patients each year
- Among the four largest pediatric cancer centers in the country, and the largest in the Southeast
- Largest pediatric hematology program in the country
- Perform 88 bone marrow transplants (BMT) each year (one of the largest pediatric BMT programs in the country)
- We care for more than 7,400 patients each year
- Our cancer survival outcomes are better than the national average
- Generate over $20.2 million per year in extramural research funding, including more than $10.7 million from the National Institutes of Health (NIH)
- One of 21 premier pediatric oncology programs designated as part of the COG Phase I and Pilot Consortium offering access to new therapeutics to children with cancer
- Ranked No. 4 nationally for enrollment in clinical trials among the 200+ institutions participating in Children’s Oncology Group (COG)
- Our faculty had 189 peer-reviewed publications in 2018
We care for more than 7,400 patients each year

Among the four largest pediatric cancer centers in the country, and the largest in the Southeast

Largest pediatric hematology program in the country

Perform 88 bone marrow transplants (BMT) each year (one of the largest pediatric BMT programs in the country)

We care for more than 7,400 patients each year
Extra Slides

■ How much does an extra slide cost?

$0.00 – Zero Dollars – Nada

■ Break wordy slides up into several – it’s FREE and makes it easier on audience
PRINCIPLES #3 & 4: SIZE & CONTRAST
Background

- Don’t clutter background with fancy patterns or graphics (e.g., your university’s logo – everyone should know where you are from from your first slide)
  - clutter
  - distract audience
  - reduce readability
Background

- Do not clutter background with fancy patterns or graphics (e.g., your university's logo—everyone should know where you are from from your first slide)

  - clutter
  - distract audience
  - reduce readability
DON'T!

THIS IS A TERRIBLE BACKGROUND!
DON'T USE IT!!!!!!!!!!!!
“You know you’re in trouble when you catch a glimpse of the slide-sorter at the start of the presentation, and it looks like an aerial view of the American Great Plains: lots of dull-coloured rectangles, each intricately lined. Not only does it resemble ploughed prairie, it is about as interesting.”
Font Style/Color

- Use a plain font unless you wish to specifically highlight a point.
- The eye is naturally drawn to changes in color so color can be useful for emphasizing a point.
- Indiscriminate use of color clutters your presentation and can wreck the listener's concentration.
- Some people color consecutive bullets differently for the sake of "variety." DON'T!
Effective use of color:

- use one color for header topic and a **different** color for bullets
- change of color **highlights** header and draws attention to header ➔ first thing you want listener to read
- **DO NOT** do this excessively or audience will be distracted
Bullets

- Limit the number of bullets per slide to $\leq 5$
  - To reduce the clutter on the slide

Avoid “the”
Bullets

■ Limit number of bullets per slide to $\leq 5$
  – reduces clutter
■ Most people can hold 5-7 items in short term memory
■ 5 bullets – majority of audience can remember points without re-reading slide
■ $>5$ bullets – some of audience will be reading slide and not listening, missing potentially important information!
Bullets

- Make bullets short and snappy.
- No complete sentences.
- Most people read an entire slide before they start paying attention to what you are saying. Hence the longer it takes to read the bullet points in your bullets the longer it will take people to start listening to you. If they take too long they might completely lose the thread of thought on that slide which can easily lead to a loss of concentration for your entire talk.
Reading Slides

- Makes you look unprepared, inconsiderate, and unprofessional
- Being read to is #1 presentation complaint
Cognitive Load Theory

- This slide illustrates why it is better not to put up a bunch of bullet points at once and why you might want to think about animation.
- Audiences can read much faster than they can listen to you talking.
- As you are reading this third bullet, you’re thinking “there’s way too much to process on this slide”, and I’m probably still on bullet #1.
- If you’ve gotten this far, you probably missed the part about why animation is a good alternative, and I’m probably still on bullet #2.
- By the time you get to this last bullet, you’re probably thinking – “I’m not hearing what he’s saying - how can I surreptitiously pull out my phone to check my email without him knowing?”
So what should you do?

- If you have several bullet points, split into multiple slides so each has just a few words.
- Replace lengthy text with a few keywords.
- Use words as prompts for the points you’re making.
- Make sure each bullet point is no more than a few words.
- No sentences.
- No paragraphs.
- Have slides support presentation – not be the presentation.
So what should you do? [1]

- If you have several bullets, **split them into multiple slides** so that each has just a few words

- Replace lengthy text with a few keywords

- Use words as prompts
So what should you do? [Il]

- Make sure each bullet point is a few words (ideally that fit on one line) [oops]
- No full sentences
- Definitely no paragraphs (except quotations)
- Have slides *support* presentation – not *be* the presentation
Condense Your Slides

■ Don’t write down in words every sentence you want to share

■ Illustrate main points through use of images
Pictures

- “A picture is worth a thousand words”
- Use pictures for emphasis instead of text
- Pictures can succinctly convey information that could take hundreds of words to convey
Pictures

- Explain pictures with ... words!
  - 🎧 Verbally oriented 🎧 audience can focus on **words**
  - 👀 visually oriented 👀 audience can focus on **pictures**

- Don’t use meaningless pictures just to make slides more interesting

- Pictures should reinforce point you are making; random pictures simply **distract** and **clutter**
Pictures

- People are far more likely to remember pictures; when they do, they'll remember what you were talking about.
Pictures

- They’re even more likely to remember videos/gifs – but don’t overdo it!
Powerpoint Special Effects

- Use special effects judiciously!
- Powerpoint makes it possible to fill your presentation with all sorts of "gee whiz" effects. You should resist the temptation to use these effects unless they actually enhance your presentation.
- Having bullets "flip in" is an example of a bad use of special effects.
- So is "pinwheeling"!
- Even "fast" pinwheeling is annoying.
Powerpoint Special Effects

■ Some people don’t like animation and find it distracting [appear]
■ Balance with having people read while you are speaking [wipe]
■ There are different ways to animate [dissolve]
■ Whatever you choose, be consistent [blinds]
Create Soft Breaks

- Re-engage short attention spans of your audience

- After every **10 minutes** or so, give your audience some moments to pause by incorporating videos, activities, demonstrations or recurrent themes
The Role of CALM Translocations in Leukemogenesis

Dan Wechsler, MD, PhD
Pediatric Hematology-Oncology
Duke University
June 2011
What is CALM?
What does endocytosis have to do with cancer?
OK – but what about iron?
What is CALM?
What do we think is going on??
Repeat, Repeat, Repeat

- Audience is unlikely to be as familiar with topic as you
- Remind people about each of these liberally:
  - Acronyms
  - Pathways
  - Concepts
Don’t Forget to Spellcheck Your Slides!
YOUR PRESENTATION STYLE
It’s All About You!

■ Ultimately, it’s you the audience should be paying attention to, not your slides!

■ PowerPoint can create great visual aids; success determined by how you deliver them

■ Good posture and body language fixes audience attention on you

■ Moving around (a bit) can create positive energy
Planning for Your Presentation

■ Review logistics in advance - not 5 minutes before!!
  - Check out AV setup
  - Can you use your own laptop?
    ■ Yes: great!!! Make sure to bring appropriate adapters
    ■ No: download necessary files, fonts and software
  - Run through presentation in the setting where you present

■ Turn off instant messenger apps and email notifications
Rehearse

- Proficient Presenters Prepare:
  - organize content & make slides
  - write script – especially for 10 min platforms!

- Perform entire presentation aloud many times
  - get feedback

- Time yourself
Energy Level

- **Enthusiasm** – eager enjoyment and active interest – audience's most desired trait

- **Boring delivery** – low monotone voice, dull facial expressions, and overall lethargy – most disliked
Distracting Mannerisms

• Habits that can distract the audience and jeopardize your credibility:
  - clenching or wringing hands
  - pacing
  - keeping hands in pockets
  - jingling change/keys
  - gripping the lectern

  - licking lips
  - adjusting hair or clothing
  - fidgeting with a pen
  - placing arms behind your back
  - touching your face
Show the Audience Your Back
(and mumble)

**Introduction**

- The problem of bound states in strongly coupled quantum field theory is difficult.
- A recent mathematical development by Kontsevich and Soibelman solves this problem in supersymmetric theories.
People relate to the human face much better than the human arse.

Look at your audience. Make eye contact.

[There followed a miserable performance in which I faced the board and tried to mumble, but completely failed to make my voice inaudible.]
Slow Down!!!

- Many speakers rush through talks
- Why?
  - anxiety, adrenaline, time
- Pause
  - before and after saying something important
  - when transitioning from one key point to next
  - between opening, main body, and closing
Don’t Make Excuses

Rich Duszak, MD and PhDisillusionment liked

Leslie Vosshall @pollyp1 · 1d
Scientific Presentation Pro Tip: If you hear yourself saying
"I know this is a complicated slide"
"This is dense slide, but..."
"Not sure if you can see this"

Don't show that slide
Don’t Make Excuses

■ Sets a negative tone

■ Gives people a reason to think your presentation was underwhelming

■ Shoot yourself in the foot
Say “I know you can’t read this but…”

- Make sure all your graphs are tiny and illegible. Never label the axes.
- Throw in equations that are just cut and pasted from a paper with lots of indices and redundant notation that won’t actually be relevant for the talk

\[ \mathcal{L}_{6} = QQLQ, \bar{L} \sigma^{\mu\nu} W_{\mu\nu} H e, \]
\[ W_{\nu}^{\mu} W_{\lambda}^{\nu} B_{\mu}^{\lambda}, (H^\dagger D_{\mu} H)(H^\dagger D_{\mu} H), \ldots \]

- Use stupid colours. Green on white is always a good idea
Pointers

■ **BEST:** animate your slides so you don’t need one

■ **WORST:** Better to **not** use mouse pointer
  - you **will** accidentally advance your slides

■ If possible, bring your own pointer
Avoid Politics

■ Just don’t do it!
■ You never know who might be in the audience
Be Careful with “Jokes”

■ Others may not find your jokes funny ... but they might

■ Know your audience...
Second to last of the Mohicans
The *MOST* Important Takeaway?

STAY. ON. TIME.
The Golden Rule

• Never never never go over time.

• Never.

• You might think that, given another five minutes, you can get more across. But you’re wrong. No one is listening at that point. You are merely pissing people off.
Tell a story
Keep it simple
Don’t clutter – ≤ 6 bullets/slide
Use SIZE/contrast
Use pictures
Use soft breaks

So?

“Mr. Osborne, may I be excused?
My brain is full.”
Death by PowerPoint

Too many bullet points. More than 4 is risky.
Too many words on a slide. Nobody listens while they read.
Too many fonts are unnecessary and distracting.
Same with too much bold, italics, and underlining.
Clip art. Really?

Bad Color Schemes
Clashing background and font colors can lead to:
- Distraction
- Confusion
- Headaches
- Nausea
- Vomiting
- Loss of Bladder Control

♦ Don’t forget to spel chek
♦ Turning your back on your audience to read your slides. No!!
♦ Small text near the bottom.
Even if they can see it, they might not be able to read it.
Thanks

- Stephanie Wechsler, MD
- Allie Suessmith
LET THE QUESTIONS BEGIN!

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