

A talk about talks

Becky Nevin

My grandfather, Tom Norris, a pathologist, circa 1960 in Boston



1934 - 2019



"HOW TO PREPARE FOR A PRESENTATION"

H. Thomas Norris, M.D.

- I. Know your audience.
 - II. Know your responsibility.
 - III. Tell them what you are going to tell them.
Tell them.
Tell them what you told them.
 - IV. Appropriate use of the aids--visual, microphone.
 - V. Practice.
-

- I. Your Audience.
 - A. Something for everyone.
 - B. Adequate introduction, adequate explanation.
 - C. No canned lecture.
 1. The response of the small bowel to cholera enterotoxin is different when presented to pathologists, microbiologists, biochemists, biologists, etc.
 - D. Size - group of 5, 50, 500, 5000.
 - E. Type - Drs. and wives, pathologists' national meeting, residents, experts, Medical Guild, TV studio, level of sophistication.
- II. Your Responsibility.
 - A. One of several speakers.
 - B. Fixed Time Limit.
 1. 55-minute talk is not 60 minutes.
 2. 20 minutes is not 23 minutes.
 3. Better to be too short than too long.
 4. Watch out if you're on planning committee.
 - a. You miss a meeting where they change ground rules.
 - b. Last minute changes.
 5. Introductions take time away from you; so does walking to podium.
 - C. Live with ground rules.
 1. Moderator makes them.
 - a. No questions until question period; questions while talking.
 - b. Planted questions.
 - D. Time of Lecture.
 1. National meeting.

"How to Prepare for a Presentation" - H. Thomas Norris, M.D. Page Two

- III. Organization of talk - no surprises - do not read it.
 - A. Tell them what you are going to tell them.
 1. Audience tuned in.
 2. All same frames of reference.
 3. Know and analyze your topic.
 4. Clear about conclusions.
 - B. Tell them.
 1. Detail enough for audience.
 2. Know supporting facts.
 3. Only 3 major goals can be achieved in one hour.
 - C. Tell them what you have told them.
 1. Summary.
 - D. It is taken for granted that you know your subject.
- IV. Appropriate use of aids - visual, microphone, pointer.
 - A. Visual - slides.
 1. Slides - make 2.
 - a. Rules of American College of Physicians.
 - 1) Lines on slide - 7 or 10 - use 10 lines double spaced.
 - 2) Sample rectangle-42 spaces wide, 14 single spaces high.
 - b. Only horizontal format - no vertical slides.
 - c. Spot slide correctly.
 - 1) Spot - left lower corner as normally view slide.
 - d. Mount slide in glass for large presentations - be sure to vent.
 - e. Low power of histologic slides, i.e., 1x is difficult; 2 x 2 glass slide is one solution.
 - f. No slide should hang up.
 - 1) Adequately trimmed.
 - 2) Use carousel universal slide tray.
 - g. With adequately prepared slide, screen width is 1/6 the distance to last row. To read slides, last row 54" from stage--screen width 9'; last row 120"--screen width 20'.
 2. **IT MUST BE MENTIONED THAT TO INVITED TALKS THE SLIDES GO WITH YOU, NOT IN YOUR LUGGAGE.**
 - B. Microphone.
 1. Difficult to use if stationary on podium.
 - a. Glue hand to podium.
 2. Lapel better.
 3. Amplified voice never sounds real.

"HOW TO PREPARE FOR A PRESENTATION"

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55 minute talk is not 60 minutes!!

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Only 3 major goals can be achieved in one hour

IT MUST BE MENTIONED THAT TO INVITED TALKS THE SLIDES GO WITH YOU, NOT IN YOUR LUGGAGE.

60 years later

2nd
Annual **SCIENCE**

SPEAK

SY

A Science Communication
Workshop for Researchers



60 years later my goals are the same:
Engagement, Clarity, and Retention

Narrative arc



Slide design



Other topics:

Accessibility

Combating nerves

Designing plots

Making beautiful slides

Fielding questions

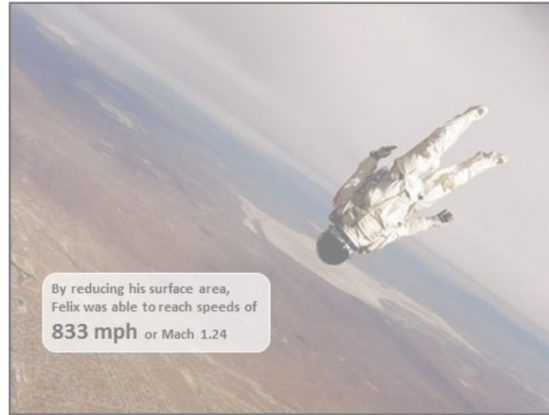
How to practice

How to do humor

Narrative arc



Slide design



Narrative arc unites all parts of the story

STORY ARC

NARRATIVE ARC



ProWritingAid



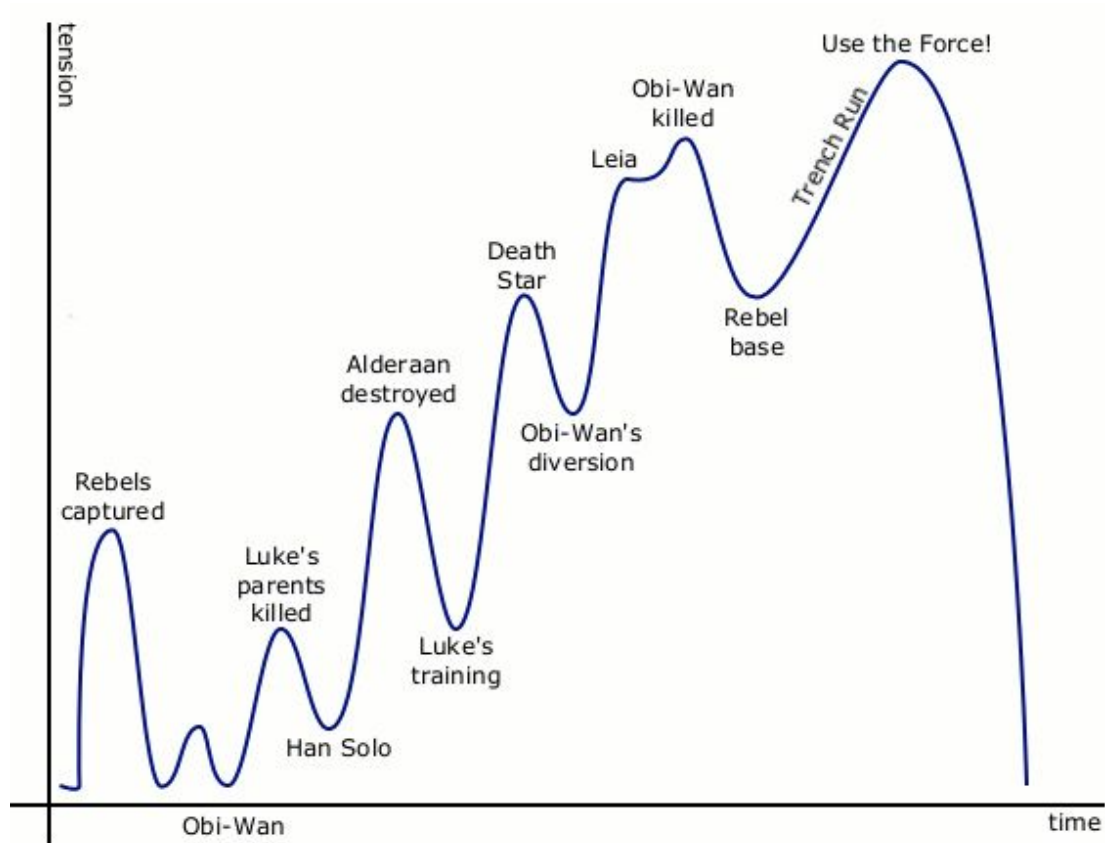
Arcs build tension (or suspense) over time

STORY ARC

NARRATIVE ARC



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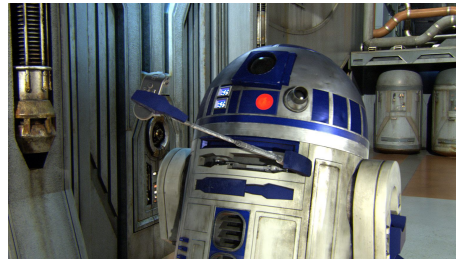
First, create the crisis (or compelling question or mystery)



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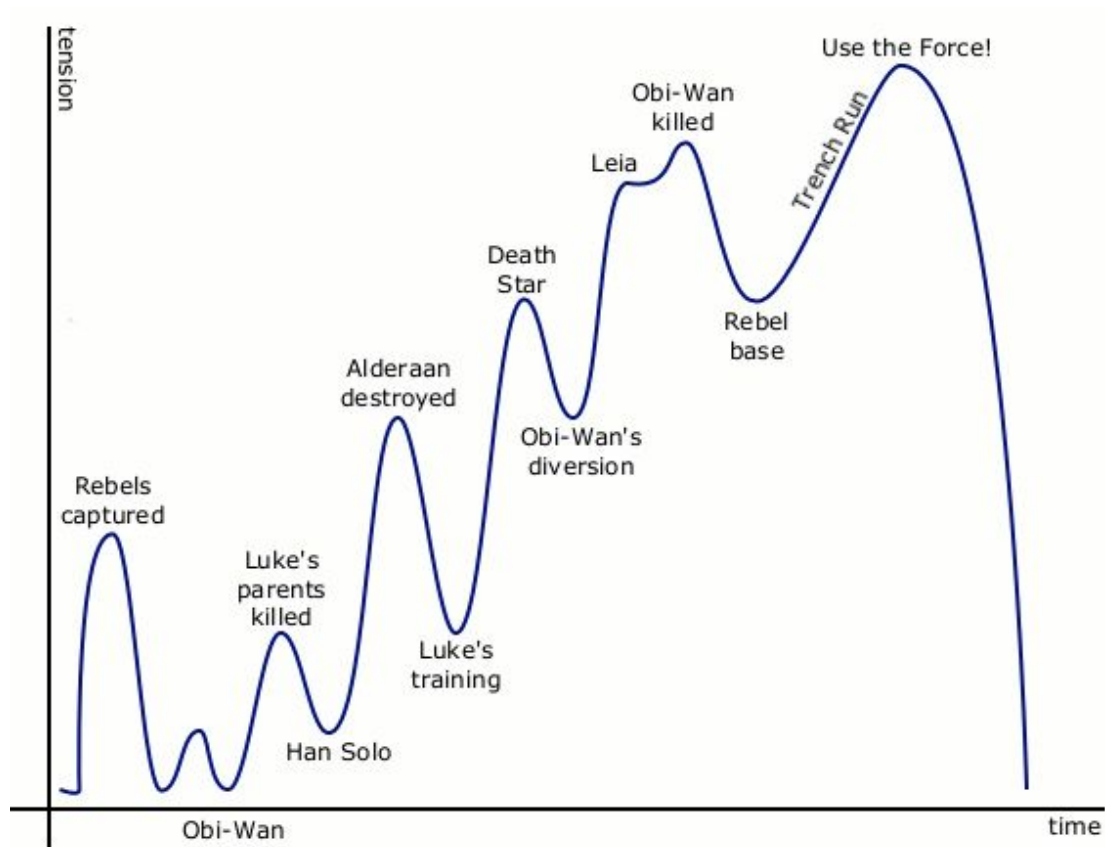


Second, decide on your hero



This could be a person (you) or a tool, technique, or object

Third, decide on the acts to build your narrative

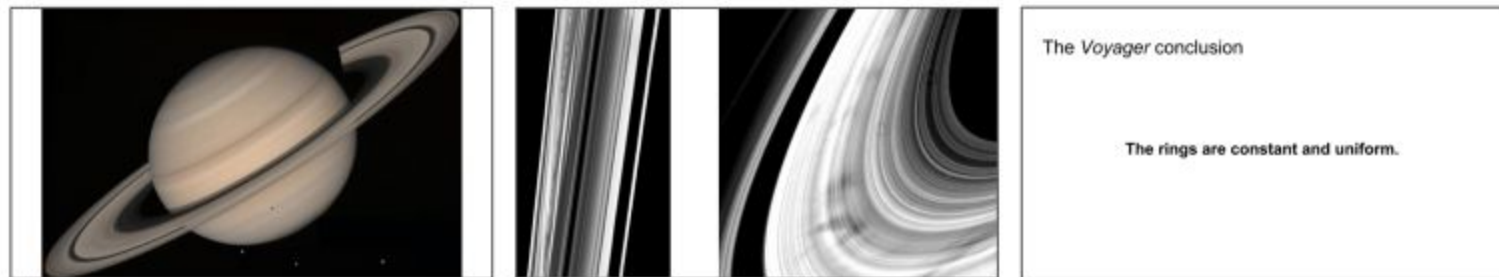


Small-Scale Structure in Saturn's Rings

Morgan Rehnberg

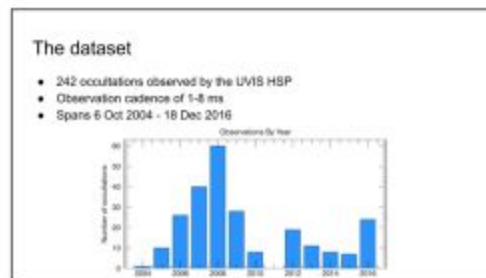
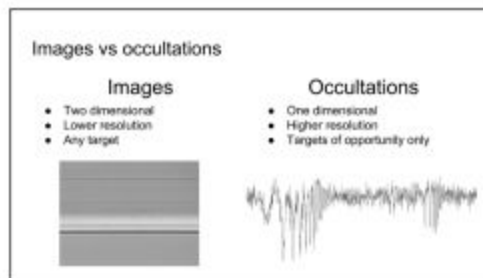
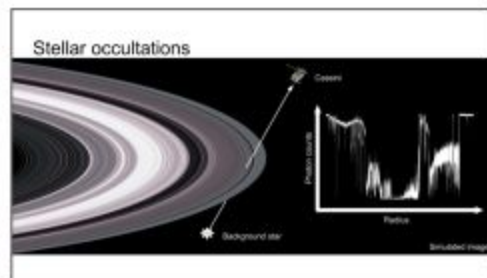
The best talk I've ever seen!

Create the crisis



My crisis: the *Voyager* conclusion is wrong

Introduce your hero



My hero: *Cassini* stellar occultations

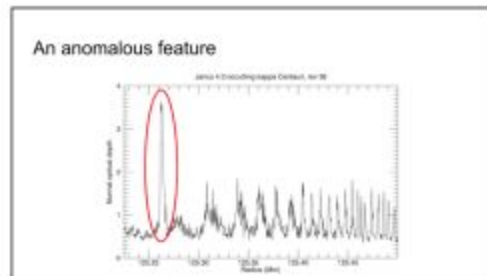
Create your acts

Break your work into discrete chunks:

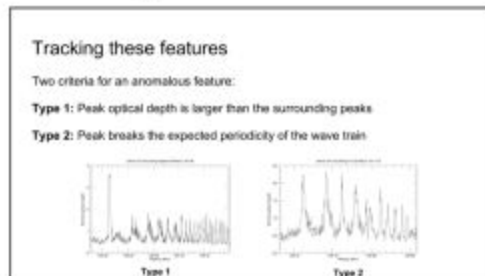
Short talk → one “act”

Long talk → 2-3 “acts”

Think of each act like a mini story



Crisis



Hero



Resolution

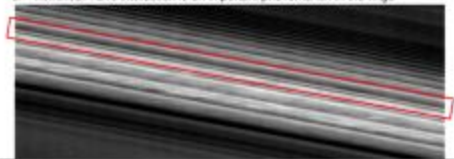
What's the point?

What's the one thing you want your audience to remember?

→ Drop things that don't support that idea

Solitary wave conclusions

1. When you look at the rings matters
2. Massive body migration can affect a nearby particle disk
3. Nonlinear wave interaction is an important phenomenon in the rings



Self-gravity wake conclusions

1. The rings are not uniform on small scales
2. Self-gravity wakes must be pretty disordered
3. Density waves affect the production of wakes

F ring conclusions

- The kinks are...
- The dynamic...
- Underdense...



What's the point?

Some big picture conclusions

1. The migration of massive bodies has major effects on the rings
2. Large processes affect smaller ones
3. We need some better models!

Here's my one thing!

**Looking at the rings today isn't the same as looking at them tomorrow
(so let's not stop looking!)**

Narrative arc



Slide design



What are your biggest pet peeves about slide design?

- Text overload
- Reading from the slide
- Plots with axes labels that are WAY too small
- Stuff in the slides that you don't talk about
- Crammed slide
- People being able to separately understand the slides (if they weren't in your talk)
 - No text versus text
- Math derivations on slides (nobody is getting this)

What is bad about this slide?

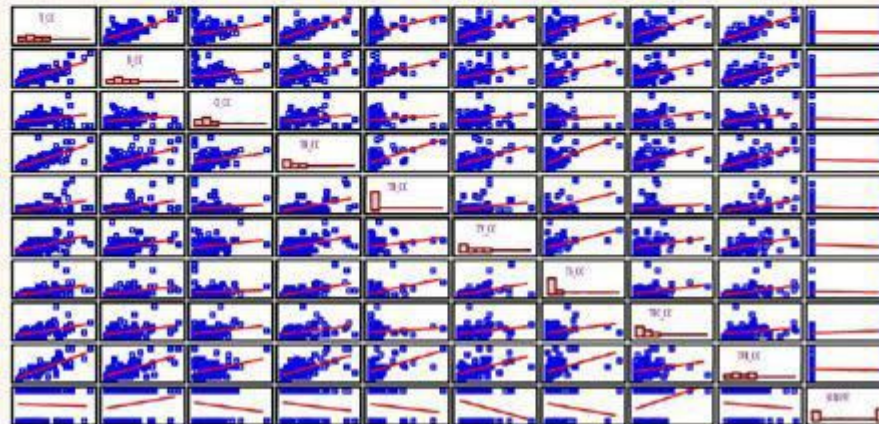
Logistic Regression Model of System: Immune Cell Ratio Factors-Survival Lung Cancer Patients:

Correlation (LCLSTA 117*10k)

Immune Cell Ratio Factors -5 Year Survival

Immunology of Lung Cancer Patients (n=108)

Logic Regression



Scientists and engineers often name the same problems with slides

1. Too many words
2. Cluttered - not sure where to look
3. Much text/ plots not readable
4. Pictures just decoration/ clip art

Scientists and engineers often name the same problems with slides

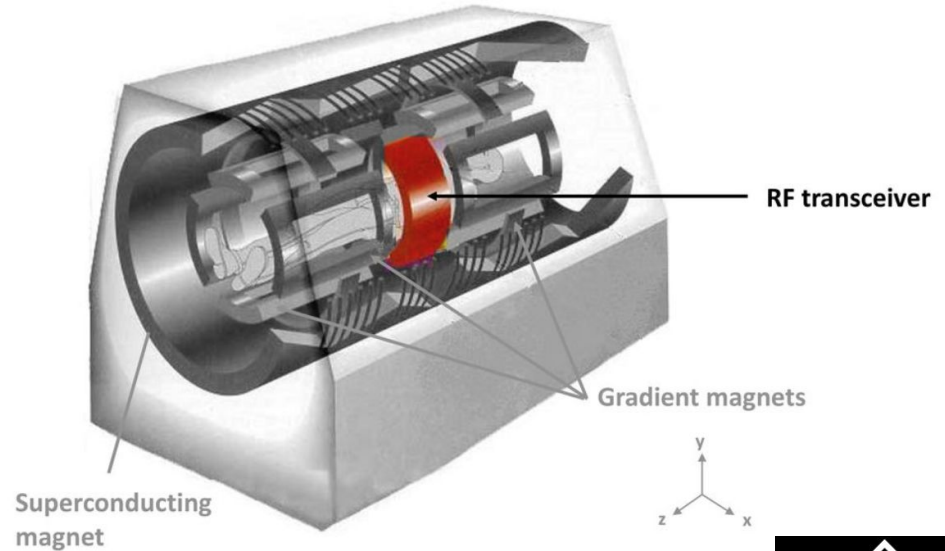
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Death By PowerPoint

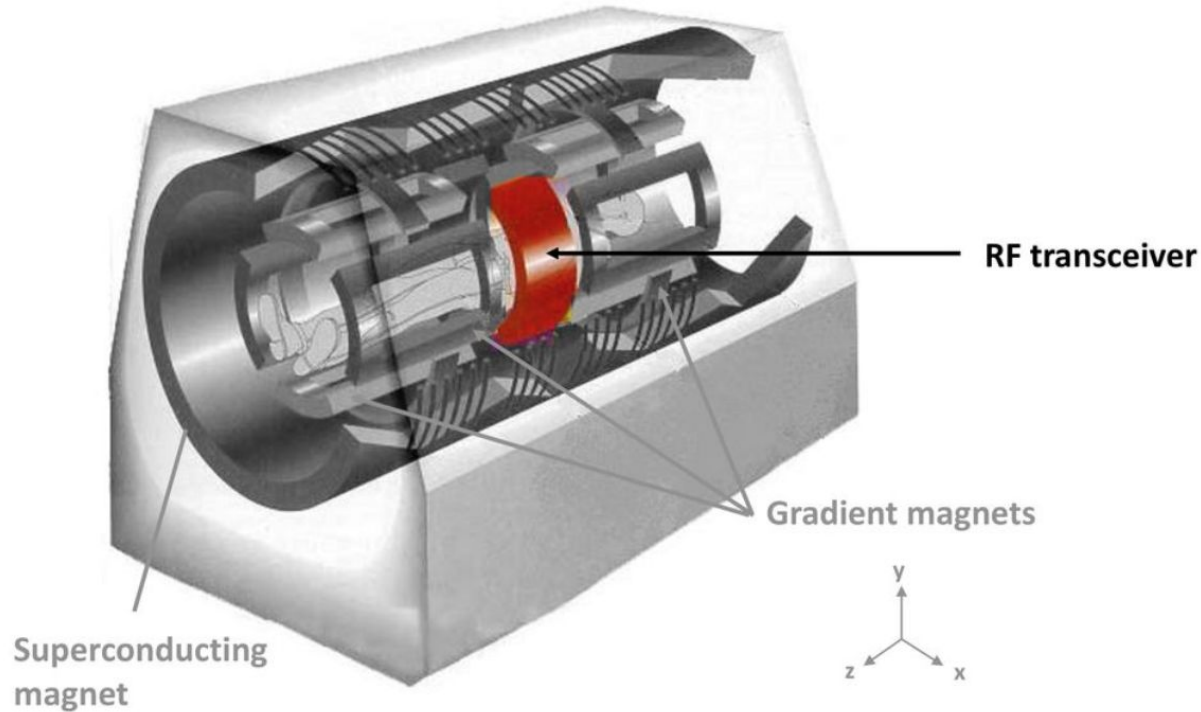
- If you write all of your presentation notes on your slide, your audience is going to read those notes.
- People can't read and listen at the same time.
- As your audience reads your slides, they can't and won't listen to you.
- Since your audience isn't listening to you, the need for you as a presenter is gone. The audience doesn't need you to read information out loud that they've already read on your slides.

Main Components of MRI

- ❑ Superconducting magnet
 - ❑ Large field: on order of 1.5 tesla
 - ❑ Strong enough to move a car
- ❑ Array of gradient magnets
 - ❑ Allows for field in set x, y, z, plane
 - ❑ Counteracts main magnet's field
- ❑ Radio frequency (RF) transceiver
 - ❑ Transmits and receives RF waves



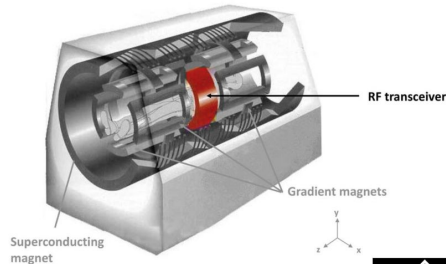
An MRI machine contains a large superconducting magnet, gradient magnets, and a radio frequency (RF) transceiver



Using the assertion-evidence approach leads to better comprehension and recall by the audience

Main Components of MRI

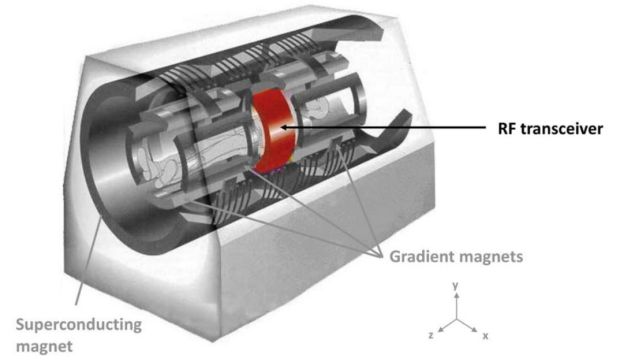
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SIEMENS
Healthineers



An MRI machine contains a large superconducting magnet, gradient magnets, and a radio frequency (RF) transceiver



Tsunamis cause devastating destruction, especially to sparsely vegetated areas.

2004 Indian Ocean Tsunami: Gleebruk Village, Sri Lanka

Before:

After:



**PPT's defaults
crowd this slide**

Tsunamis cause devastating destruction, especially to sparsely vegetated areas

Before



After



2004 Indian Ocean Tsunami: Gleebruk Village, Sri Lanka

TEXTURE-INDUCED ANISOTROPY IN THE MAGNETO-ELECTRIC COUPLING RESPONSE OF MULTIFERROIC COMPOSITES

S. Bourn¹, J. Mercer², P. Bissell¹, S. Lepadatu¹ and M. Vospon^{3,4}

¹Jeremiah Horrocks Institute,

²Department of Physics, University of

³Faculty of Science, University

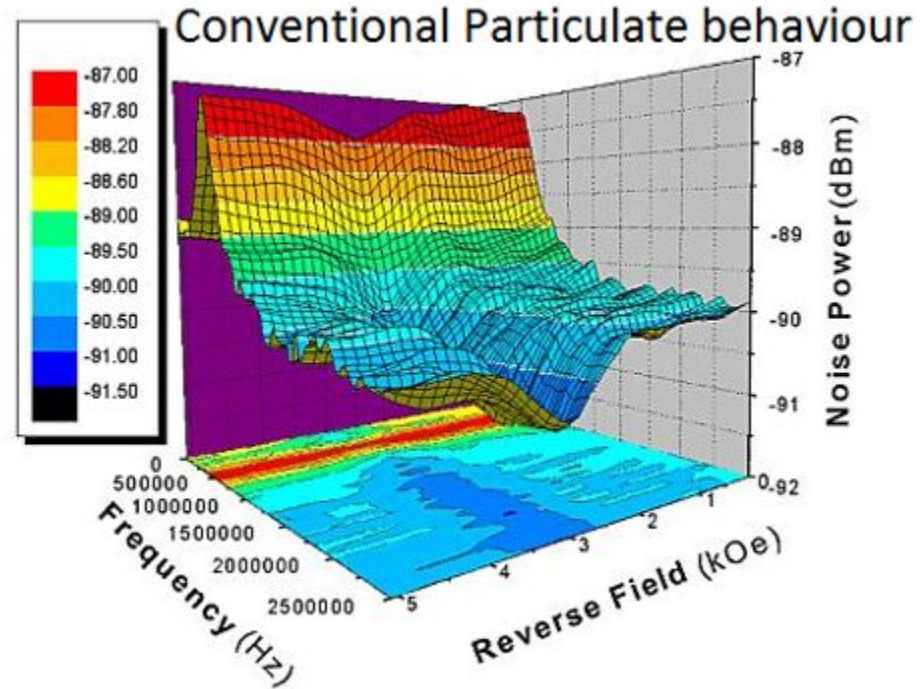
UCLan, Preston UK

Liverpool, Liverpool UK

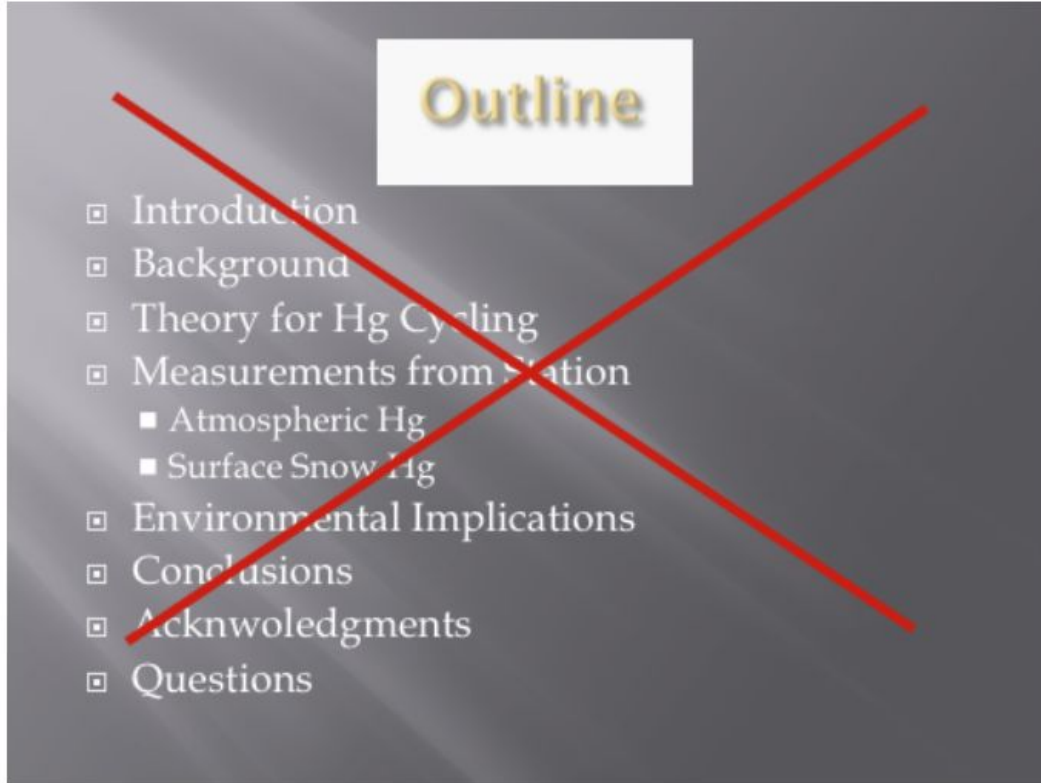
of Portsmouth, Portsmouth UK



Using a cool new technique, we do a cool new thing to these cool composites
Speaker's Name



A common error in talks is to present a bulleted outline



Narrative arc



Slide design



Do not waste your last slide



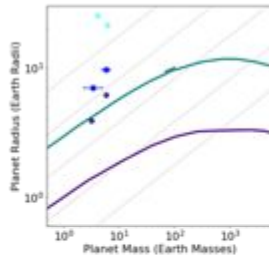
Questions ?

June 23, 2008

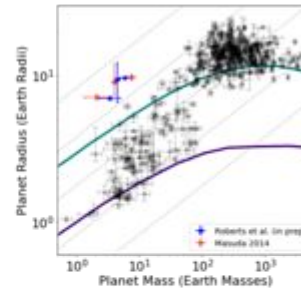
2008 ASEE Annual Conference -- Pittsburgh

Bullet point conclusions can be hard to follow, and sometimes you forget where a conclusion came from

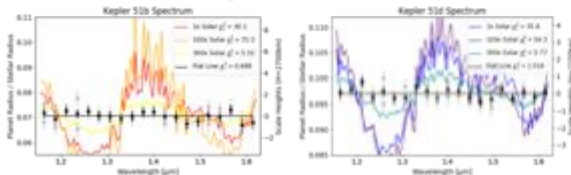
We observed the 500 Myr Kepler 51b and Kepler 51d before they contract



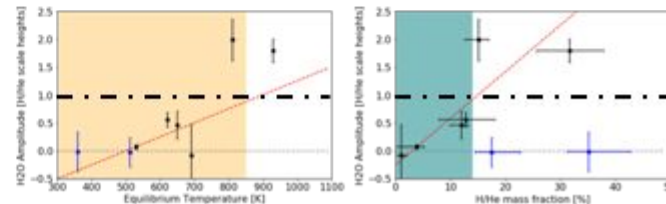
We confirm the low-densities of all three planets



High-altitude aerosols are flattening the transmission spectra



We support the hypothesis that temperature, but not H/He mass, is linked to aerosol formation



Use imagery to remind people!

What is the best talk you've ever seen and why was it so excellent?

Do you have any hesitation with what I covered today?

Is there anything else that's worked particularly well for you?

Narrative arc



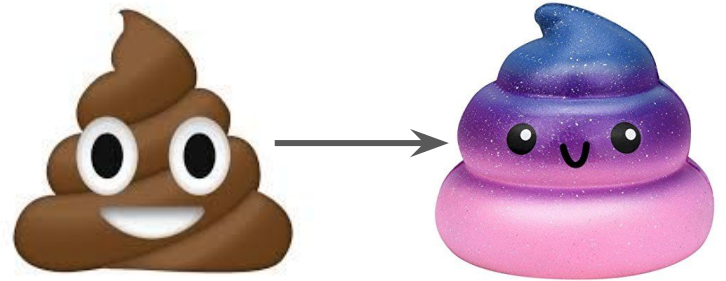
Give your story a hero, context, and a path to follow

Slide design



Assertion evidence approach for maximum retention and engagement

From cholera to galaxies, I hope these tips help you to improve engagement, clarity, and retention!



(Cholera joke)

Narrative arc



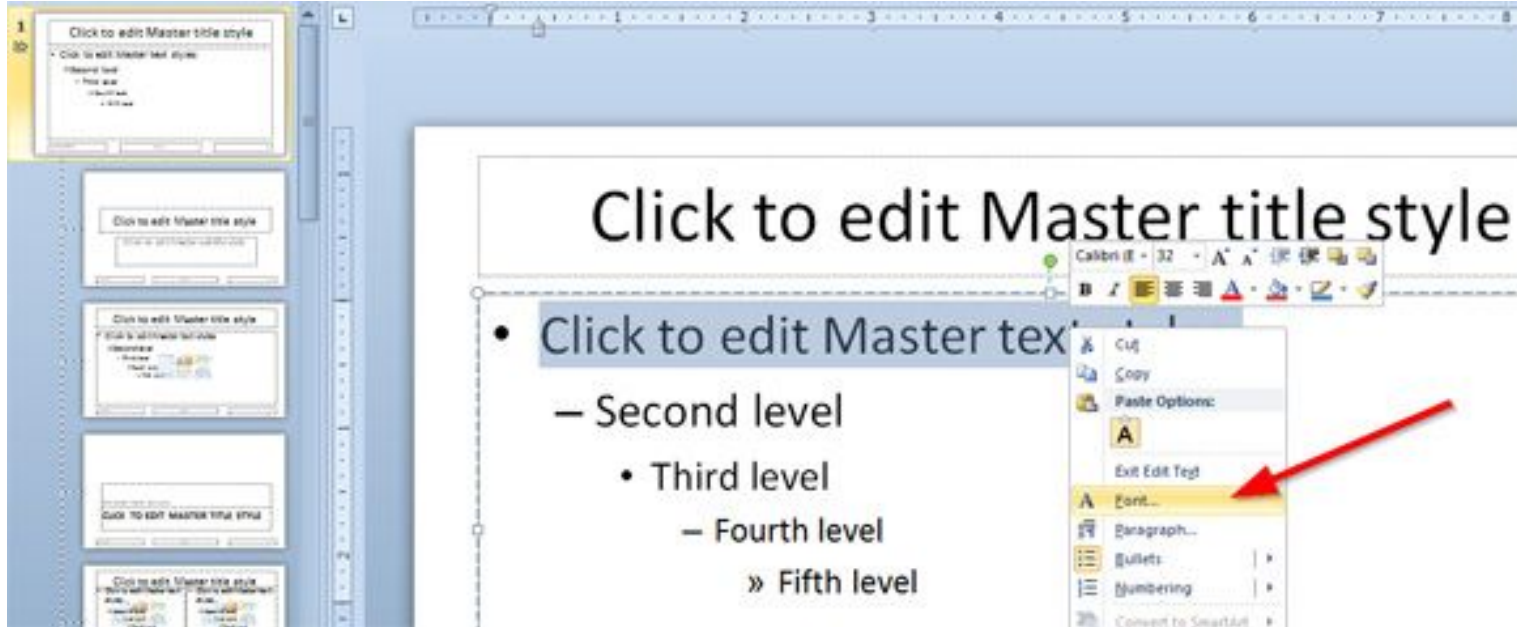
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Assertion evidence approach for maximum retention and engagement

PowerPoint's defaults arose before much research on slides and have not changed over time



PowerPoint's defaults run counter to how people learn

The diagram shows a slide layout with three main sections. The top section is a single-line button labeled "Click to edit Master title style". The middle section is a list of navigation options: "Click to edit Master text styles", "– Second level", "• Third level", "– Fourth level", and "» Fifth level". The bottom section is a large empty rectangular area. Arrows point from each of these sections to a vertical line on the right, which is annotated with three points: "Does not filter noise" (pointing to the top button), "Leads to too many words" (pointing to the list), and "Consumes valuable space" (pointing to the large empty area). At the bottom of the slide, there are three footer boxes containing "9/7/2010", "Footer", and "".

- Click to edit Master title style → **Does not filter noise**
- Click to edit Master text styles
 - Second level
 - Third level
 - Fourth level
 - » Fifth level

Leads to too many words

Consumes valuable space


9/7/2010 Footer

Follow-up on learning
pedagogy and why PPT
templates are actually evil

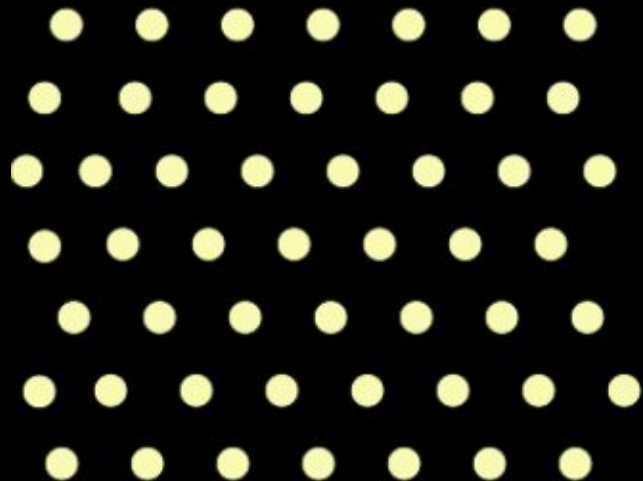
In the tests, two groups of students viewed different PowerPoint talks with the *same* recorded script

When Gradient Magnets Turn Off

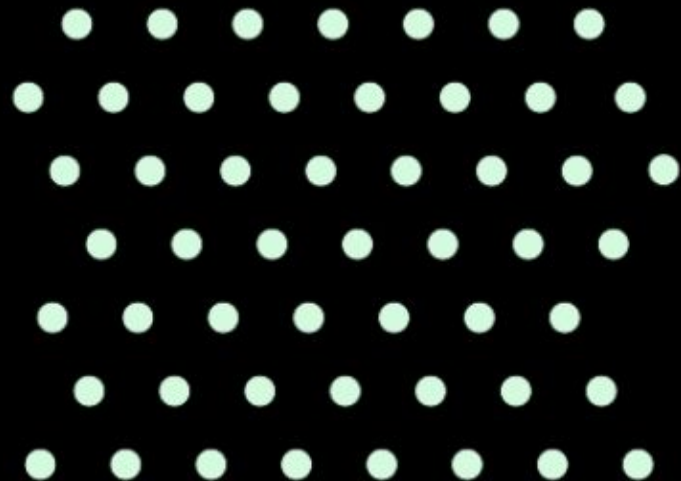
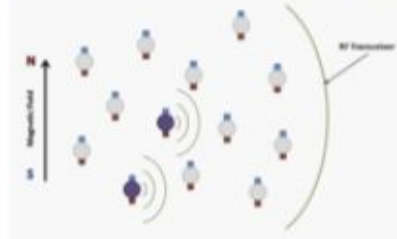
- Field from superconducting magnet realigns atoms with RF energy
- These atoms move to lower energy state and release RF wave
- Transceiver can detect these waves
- The frequency of RF wave depends on molecule containing the H atom



ENGR HEALTH



When the gradient magnets turn off, the superconducting magnet's field forces atoms to realign and release energy



Assertion-evidence slides led to better comprehension and recall of more complex concepts

42%

$p < .01$

59%

How Image Slice Is Created

When Gradient Magnets Turn Off

When RF Waves Are Applied

How the MRI Process Begins

- Atoms have spins, which normally point in random directions
- MRI patient is placed in strong magnetic field so that spins align with field
- Gradient magnets send counter-acting field to small cube (voxel)
 - Field significantly lower in this voxel

ENGR / REALITY

By repeating the MRI process in the many voxels across a slice, an image of that slice can be created

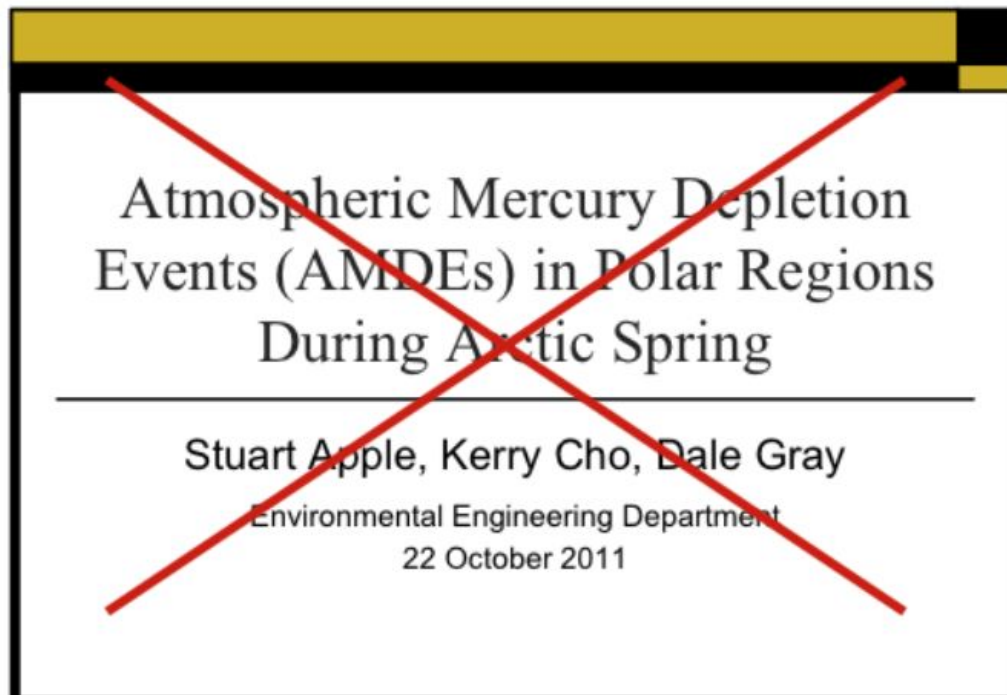
When the gradient magnets turn off, the superconducting magnet's field forces atoms to realign and release energy

Applied RF waves add energy to hydrogen atoms, causing some to fall out of alignment with the magnetic field

Applying a magnetic field causes the spins of atoms in the body to be aligned parallel to the field

Magnetic field ↑

A common error in the beginning of scientific talks is to leave the audience behind



Determining Whether Atmospheric Mercury Goes into Surface Snow after a Depletion Event

Katrine Aspmo

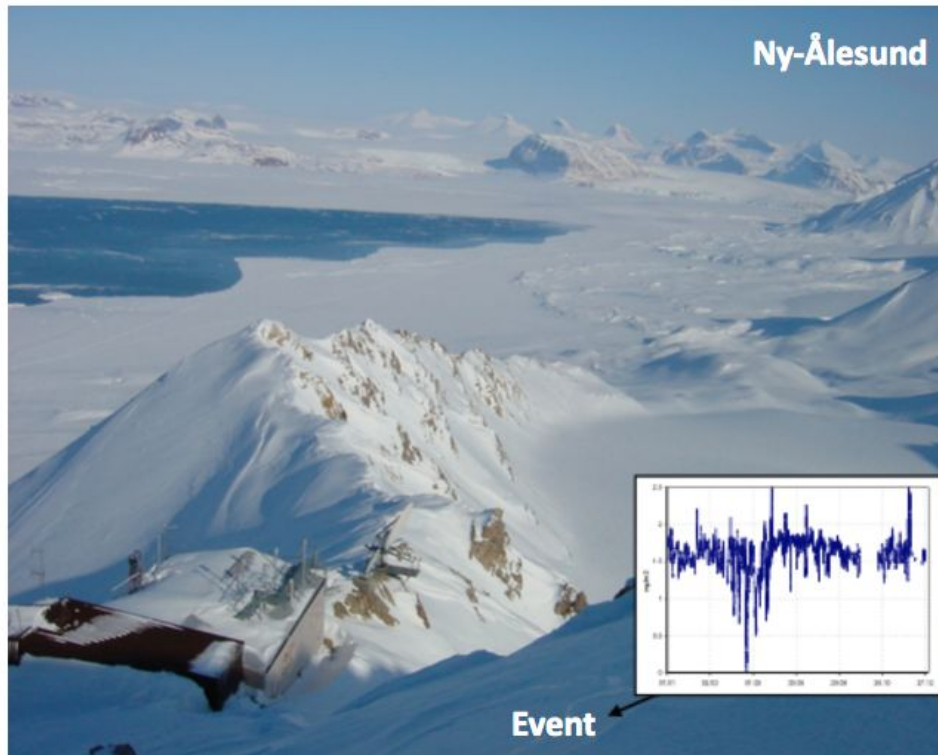
Torunn Berg

Norwegian Institute for
Air Research

Grethe Wibetoe

University of Oslo,
Dept. of Chemistry

June 16, 2004



This talk traces what happens to mercury after it depletes from the atmosphere in arctic regions



Theory for mercury cycling

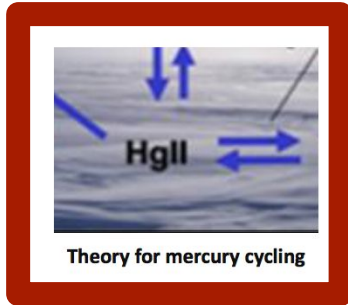


Measurements from Station



Environmental implications

If using an outline, keep coming back to it and highlight where you are



[Alley,

Or include your outline on every slide, but put at the bottom or on the side



Dealing with resistance

- What about important information that you're not saying?
 - Handout \neq slides
- Doesn't look as genius?
 - You're actually alienating your audience, this is not doing you any favors
- What about equations on slides?
 - You can still have them but you gotta make em big and you gotta explain every term

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SPECIAL EDITION

PATHOLOGY NEWS

1 JULY 1976

YACHTSMAN NAMED PROFESSOR AT UNIVERSITY OF WASHINGTON



Professor H. Thomas Norris

Seattle, July 1. Today, while cruising the South Pacific in his T-Bird Yacht, Dr. H. Thomas Norris learned that the Board of Regents of the University of Washington had promoted him to the rank of Professor of Pathology.

Dr. Norris has been combining a family yachting vacation and conducting research studies of rare and debilitating tropical diseases amongst the population of the South Pacific islands. Dr. Norris successfully combines his research interests with his primary responsibilities as Director of Hospital Pathology at the University of Washington's teaching hospital in Seattle.

Dr. Norris and his charming wife, Fatty, were delighted to receive the happy news of his promotion. The message was relayed from his office at University Hospital in Seattle via ship-to-shore radio. He also learned that his staff was celebrating his promotion with a cake in his honor. ens storyline.

4. With no microphone - raise voice when turning from audience.

V. Your appearance is also very important.

VI. Practice.

A. Speak slowly, clearly, distinctly.

B. Talk from slides.

C. Present before colleagues.

1. You are too close to your subject.

2. You know more than anyone else.

3. Need a fresh new look at your talk.

4. Rigorous review - constructive criticism.

5. Everywhere I've been, talks outside the medical center have been rehearsed many times. I would like to establish that within our department.

D. Be ready for podium on right or left of stage.

E. What to do when the projector lamp burns out.

F. End your talk with "thank you".

Conclusion: Being an excellent speaker is a learned type of experience. It comes with practice.