

Leveling Up: Maximize Presentation Potentials, Both Personal and Enterprise-Wide®

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WEBINAR

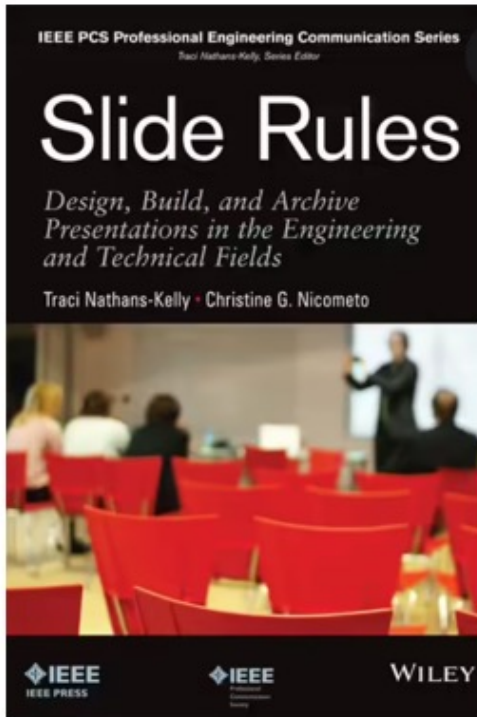
Sept 2021
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Nathans-Kelly Bio:

Currently teaching for Cornell University's College of Engineering, with deep experience in online modalities for higher education. I have a special interest in social justice and techquity issues. As a member of the Engineering Communications Program at Cornell, I interact daily to help engineers and pre-professional engineers to hone their technical messaging, whether it be via presentations, on paper, in meetings and teams, or online channels. I have worked with practicing professional engineers, technical experts, scientists, and related field experts for over 20 years, helping them to strengthen their abilities to become impactful contributors in their organizations.


She co-authored IEEE's "English for Technical Professionals" online course. She serves on the IEEE Educational Activities Board in the Continuing Education division, and she is on the Editorial Board for IEEE's Teaching Excellence Hub. In 2014, based on her extensive work in the field of presentation design, she co-authored the book, [*SlideRules: Design, Build, and Archive Presentations in the Engineering and Technical Fields*](#), published by IEEE-Wiley.



Christine@techforumconsulting.com

The book is widely available, both as a softcover and as an e-book in a variety of formats.

Christine Nicometo, who co-authored the book with Nathans-Kelly, is available for personalized consulting and professional development projects.



This talk seems to focus on slides. However, the slides are the low-hanging fruit.

By rethinking slide design, you will be able to have a more authentic interaction with your audience.

You won't be reading bullets.

You won't be beholden to slides crammed with too much information.

Note 1/3

This slide was not in the recorded talk. However, if you are only looking at the slides and not the video, this will help you to understand the goals.




You will be able to distill your messaging.

You will be able to target your visuals to support understanding.

You will regain expert presence during your own talks, instead of playing second fiddle to your slides.

Note 2/3

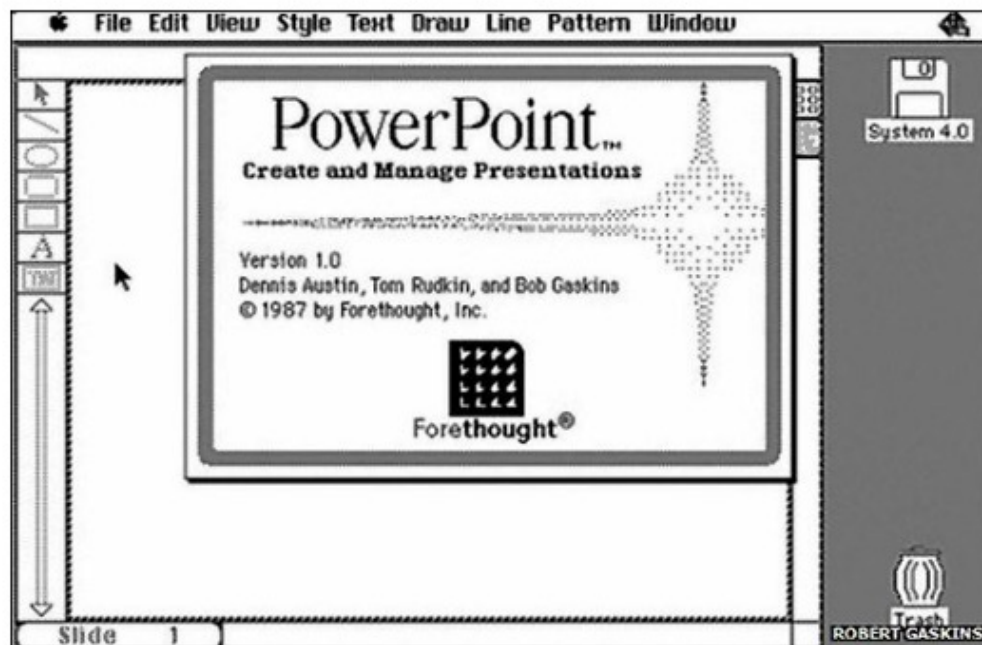
This slide was not in the recorded talk. However, if you are only looking at the slides and not the video, this will help you to understand the goals.



But how did we get to this place of remediation?

Note 3/3

This slide was not in the recorded talk. However, if you are only looking at the slides and not the video, this will help you to understand the goals.

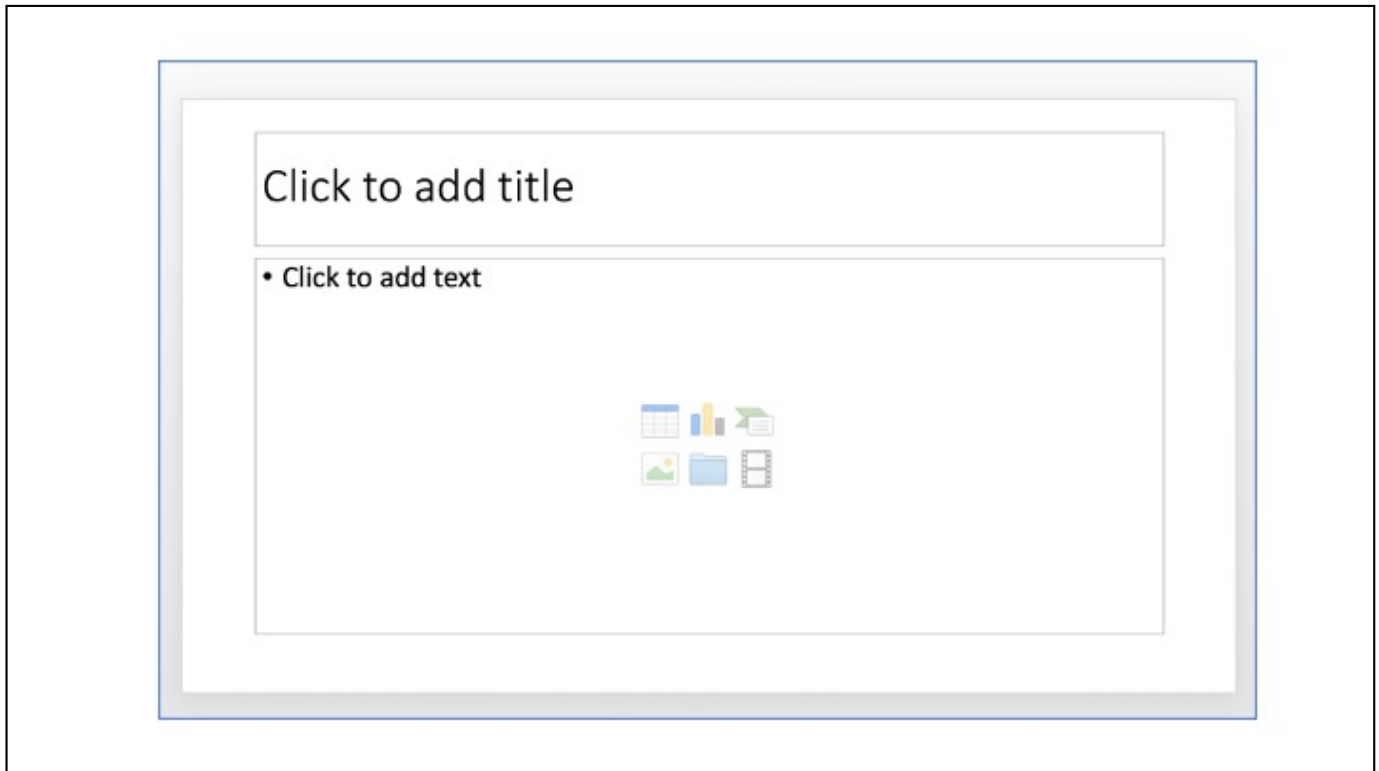


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And so we begin.

We need to understand how we got to the messy place, where we are now, with slides. Understanding this short story will help users understand how and why to enact change in their techniques and patterns of use.

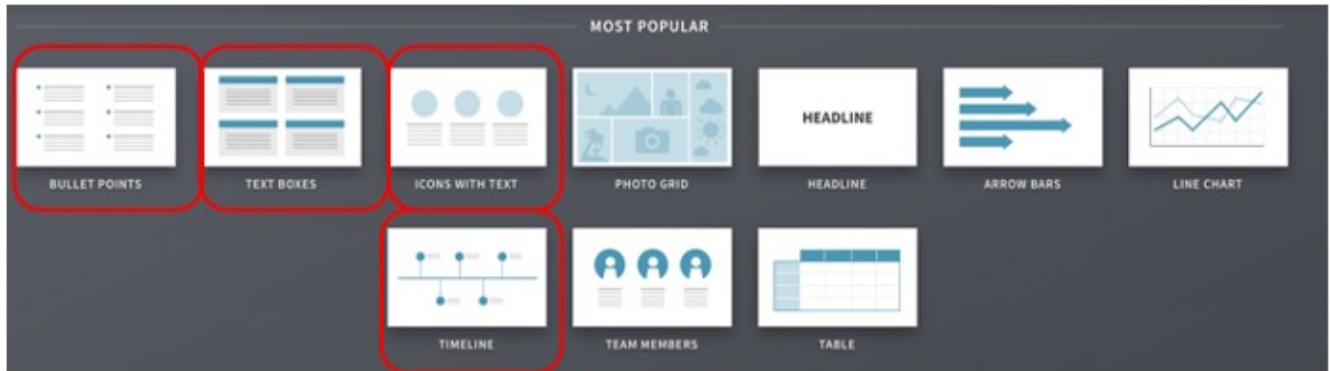
1987: Robert Gaskins markets PowerPoint, which is a rebranded version of a Mac product called Presenter.



Poor practices come from the templates themselves! Just look at the screenshot from this very same slide deck that I'm using now.

This is almost every template you will ever see. It encourages short headings and bulleted text.

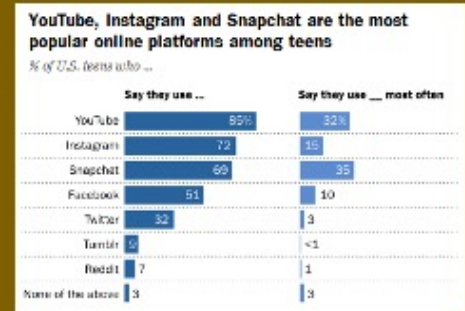
And what does that do to presenters?



Even the most beautiful new marketing of slide software packages still rely on faulty designs and ill-conceived designs that don't take in workflow, audience, or proprietary needs.

Research Results

- ☐ Teen use of Facebook dropped 20% in the last two years.
- ☐ YouTube, Instagram and Snapchat are favored.
- ☐ Teen mobile phone/smart phone use almost ubiquitous.
- ☐ This contradicts their at-home access to a computer.
- ☐ Worries about too much screen time
- ☐ More schools using online resources, gradebooks, class videos, etc.
- ☐ Do screens lead to less homework time?
- ☐ Are screens part of homework time?
- ☐ Teacher and parent concerns
- ☐ What are next steps in the district?

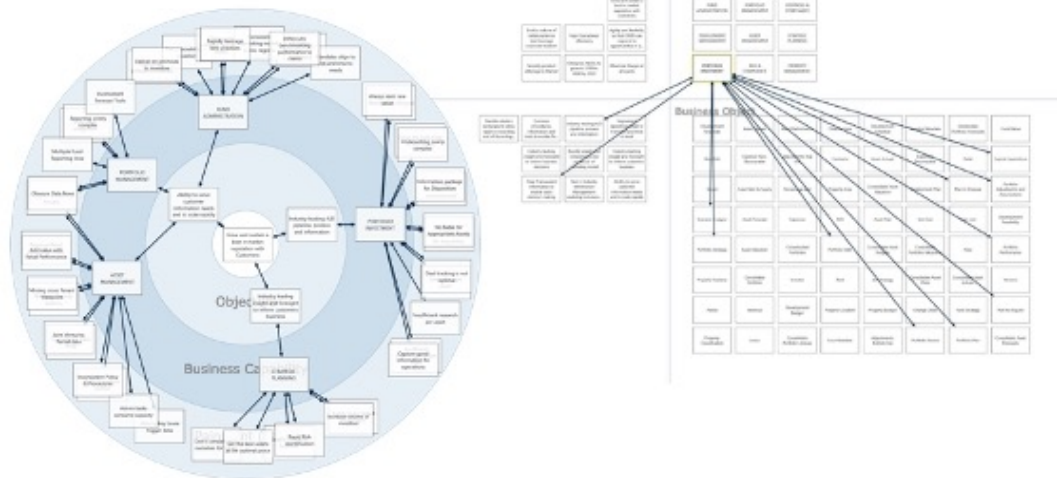


Source: Pew Foundation, 2019. <https://www.pewresearch.org/2018/04/24/teens-social-media-technology-2018/>

Bad templates result in bad information flow.

This is a pretty typical slide. There is too much going on in the middle of this slide. When you pummel the audience with a slide like this, they tune you out and set to the task of deciphering the compelling pictures. This is when key information is lost and the opportunity for interaction and true understanding diminishes exponentially.

SAMPLE THREAD ANALYSIS

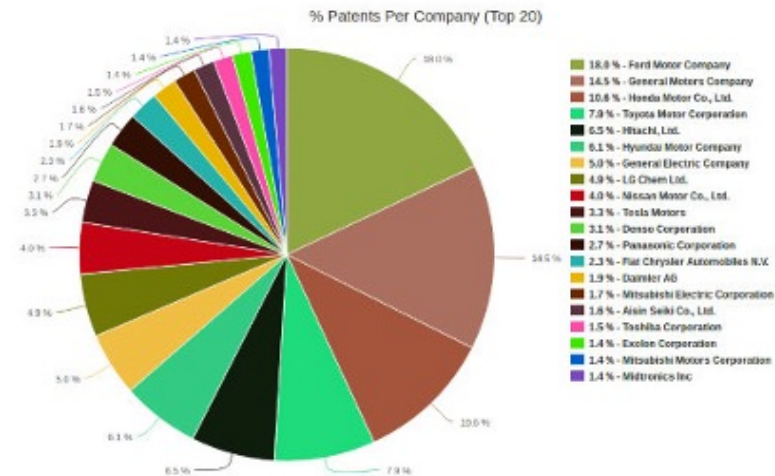


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And when folks were tired of bullets, they made overly complicated graphics. Again, the gesture was in the right spirit, but the slide tool was not being put to its best purpose.

And while visuals came into play, people forgot to layer them in. So when something like this appeared on the screen, the audience tunes out the speaker and begins to concentrate on figuring out the complex picture. When a complicated visual is used, the speaker may as just leave the room because nobody is listening.

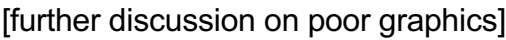
Patents



Ford itself holds almost one-fifth of all electric vehicle IP and together the two American companies [Ford and GM] give our country just about one-third of the patents in this field at 32.5 percent, as we can see from the pie chart we have thanks to the patent analysis portfolio tools at Innography. In third place is Honda Motor Co. (NYSE:HMC), followed by Toyota Motor Corp. (NYSE:TM) of Japan, a company that also has a pretty dominant position in fuel cell vehicle technologies as well. Together, they give Japan a solid position as runner-up to the EV innovation happening in America.

Here is another poor example, but in a different vein. Sure there's data. But can anyone read it? And what is the MAIN message?

- Image source:
- <http://www.ipwatchdog.com/2015/09/02/electric-vehicle-innovation-america-tops-japan/id=61178/>



[further discussion on poor graphics]



As sad as it is to say, everything you see here is precisely wrong about presentations.

1. too much text
2. the speaker is reading it
3. the speaker is not facing the audience
4. it is dark
5. the slide is a glowing monolith...an attention hog



[discussion on positives here...she's facing audience, there's interaction, one main idea on slide]



[discussion on positives here...she's facing audience, there's interaction, one main idea on slide]



- We have become a culture where technical presentation slides are nothing more than teleprompters...



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Speakers should reconsider the slides as a tool, using them more like JumboTrons.

Our mistake comes when we forget that slides are meant to be, during the live talk, more of a JumboTron than a teleprompter.

Photo credit: Ken Beldon. Used with permission.

Slides often have to do double duty.



Slide decks have two lives, and the slide files should support both of those efforts simultaneously. As such, the slide deck becomes an efficient, elegant, rich technical document that has longevity and vitality within organizations.

Today, we are going to begin the conversation about how to accomplish those seemingly at-odds objectives so that your work, housed in slides, carries the technical weight and purpose that it is meant to carry.

Three simple moves will transform everything.
Three simple moves

Sentence Headers



Optimized Visuals



Archival Notes

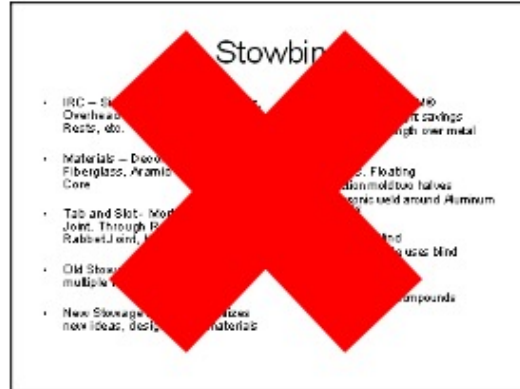


1

Sentence Headers

The old ways don't work for anyone.

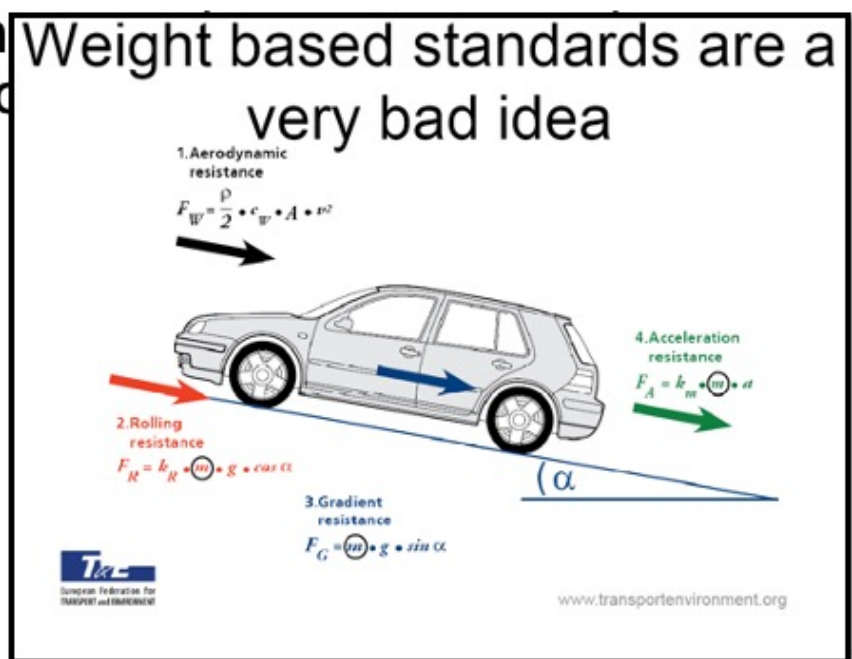
Traditional model =



The first way to combat many of the problems we listed there is to get rid of the old models that use fragments for headings. Such snippets of thought only produce confusion and prompt guessing games for the audience. And those short headings are next to useless as archival material.

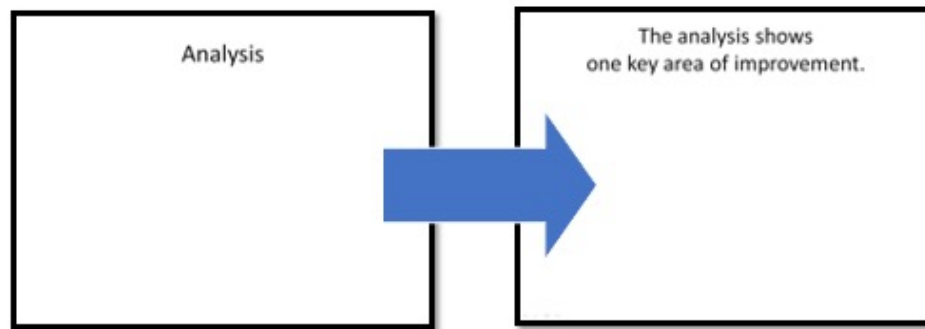
Weight based standards are a very bad idea

N New model =



Instead, using full sentence headers allows for one complete thought to be brought forth. Then, the point can be elaborated upon to great degree.

Efficient sentence headers aid comprehension.

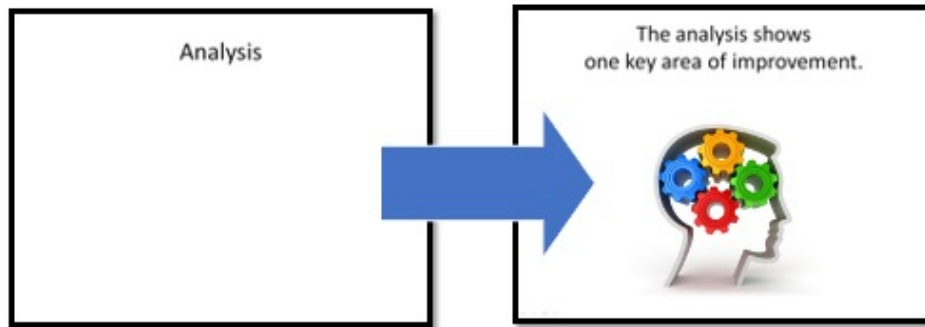


One of the strongest changes you can make to your slides is to use full, short, sentence headers.

Instead of using fragments, or brief phrases, as the basis for your outline, challenge yourself to outline with complete thoughts. This sentence header acts as an executive summary for your learners.

Without having to struggle to fill in the blanks in your thinking, your audience will be better able to retain the information and ideas you are presenting. In addition, your assertions will leave little doubt in your audience's mind as to the direction of your presentation.

Sentence headers help organization.

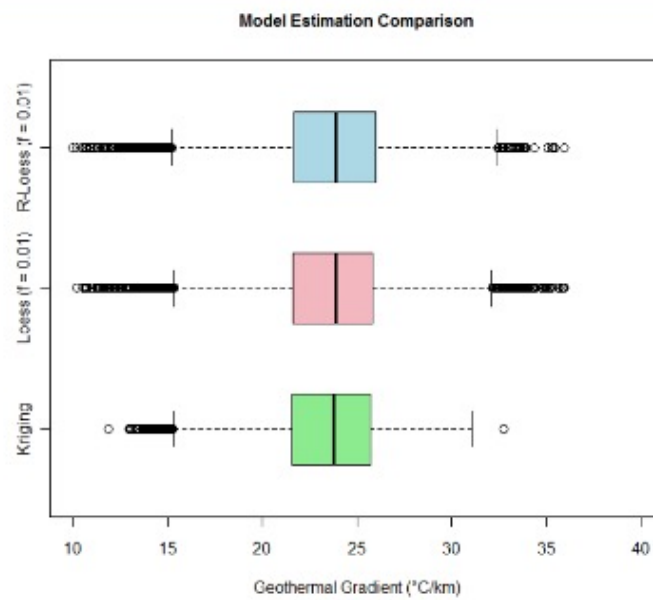


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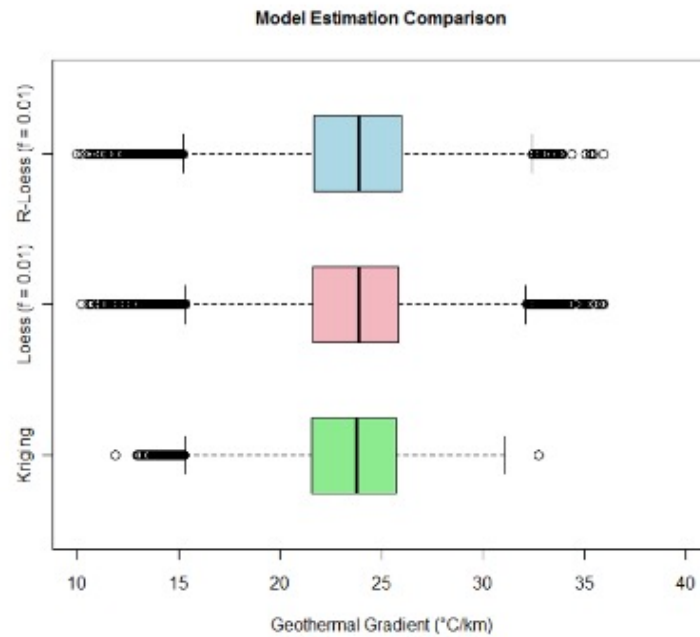
Results: Comparison of Estimation Methods



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In this “before” slide, we see some common practices. But let’s focus for now on the fragmented header.

Estimation methods validated cross-functionally.



A value-add for a header is to make a short, targeted claim or statement of fact.

Let's look at a few quick examples from very different kinds of technical presentations.



Our program
brought STEM
projects to 27 grade
schools in just three
years.

Side note: Headers don't always have to be at the top.

T-3 shows more variability.

One-way ANOVA: PACs/Acre T-0, PACs/Acre T-1, PACs/Acre T-2, PACs/Acre T-3

Source	DF	SS	MS	F	P
Factor	3	18466	6155	5.70	0.003
Error	36	38907	1081		
Total	39	57372			

S = 32.87 R-Sq = 32.19% R-Sq(adj) = 26.53%

Level	N	Mean	StDev
PACs/Acre T-0	15	164.50	35.77
PACs/Acre T-1	9	123.87	18.20
PACs/Acre T-2	10	182.24	28.76
PACs/Acre T-3	6	176.14	46.68

Individual 95% CIs For Mean Based on Pooled StDev

120 150 180 210

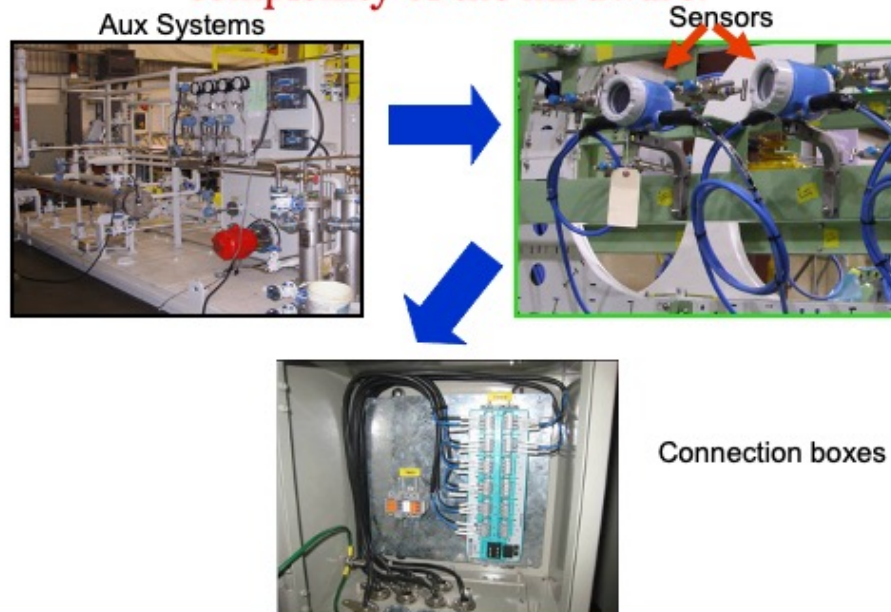
Pooled StDev = 32.87

The header here “interprets” findings for the managers who are not used to this kind of data output. The inserted arrow directs the eye to the salient point in the data output graph.



Bananas account
for 75 % of the
world's tropical
fruit consumption.

Wireless signaling could offset some of the complexity of the hardware.



Notice the good use of a sentence header with a progression of graphics to support the speaker's point.

“The compressor has auxiliary systems with electronic sensors, which are wired to electrical junction boxes using special cables and conduit.”



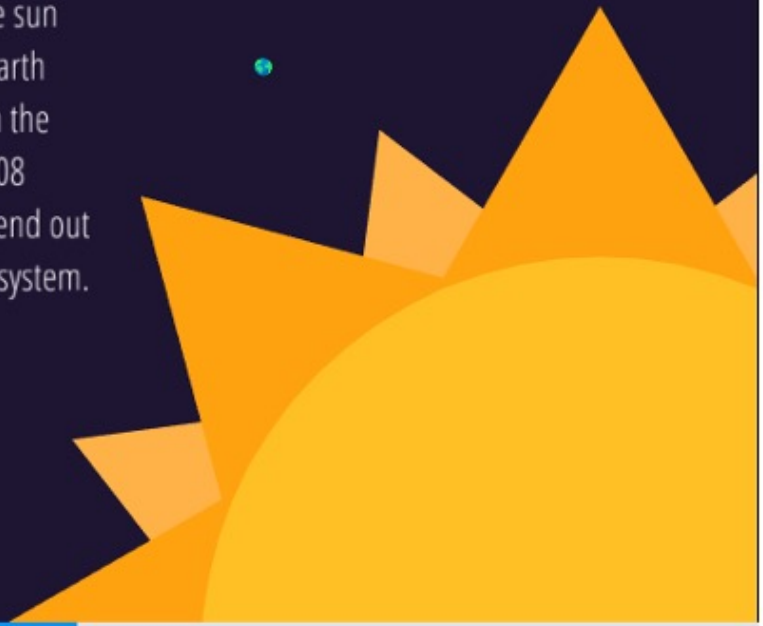
We can take that idea and focus it even more, especially if good graphics are available.

A header doesn't always need to be at the top!

2

Optimized Visuals

To put it into better perspective, if the sun were the size of a **basketball**, the earth would be a **sesame seed**. Although the sun is incredibly Large, UY Scuti is 1708 times larger. This means it would extend out to Saturn if in the center of our solar system.



Here, the graphic is great, but there's so much text on the slide that audiences will ignore the speaker and use their mental bandwidth to read.

Self-Driving Cars

Legal issues continue to be a mystery—
unchartered territory

Lidar? Radar? Camera?

City infrastructures cannot support of the self-driving cars



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So, let's revisit some old habits.

Here is a fragmented header, which we need to fix.

We also see a small picture (targeted visuals are good!) and some text to the side. But the text is small, and the speaker plans to talk about these items aloud anyway.

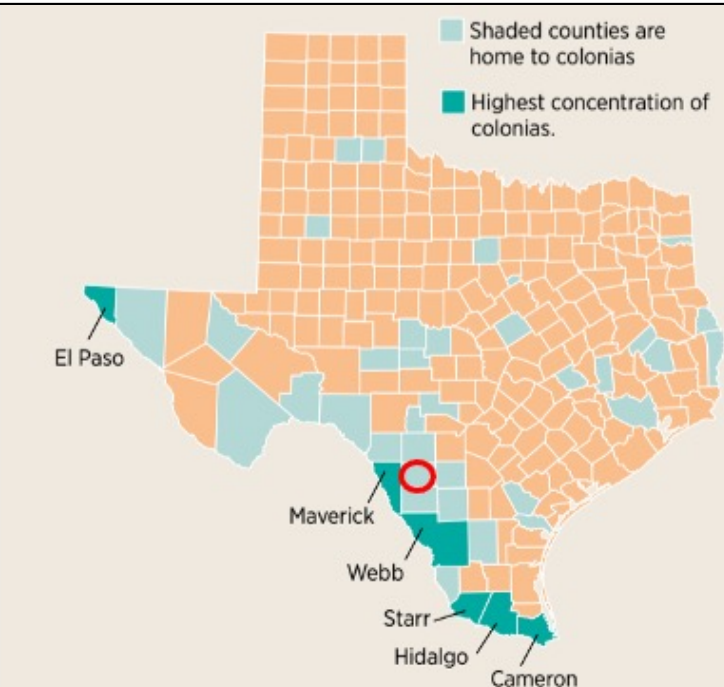
How can this be improved? What can make the most impact and support the main point?

Self-driving cars are being addressed.



The header is easy to comprehend, and the visual is just for decoration, in this case. However, it's a targeted visual, relevant to the topic at hand.

Las Colonias are communities located near the U.S.-Mexico Border.



SOURCE: Texas Commission on Environmental Quality, 2013.

This is a great example from a team of engineering students at Cornell who were working on a wind water pump project. They were asked to find communities in need of such technology.

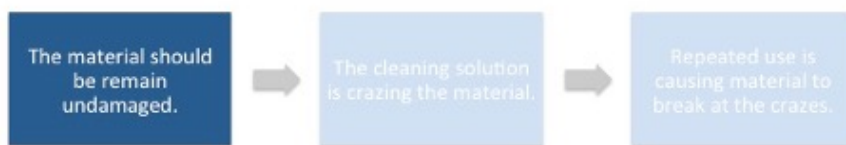
Slide from “**Las Colonias water pump installation progress report**” by Tyler Katz, Cora Peterson, Tom Kessler, Emmanuel Paulino. May 2017.

Source: J. Barton, E. Perlmeier, E. Blum and R. Marquez, *Las Colonias in the 21st Century*, 1st ed. Dallas: Federal Reserve Bank of Dallas, 2017, pp. 1-2.

2,294 colonias, 500,000 residents

Zavala county, near crystal city Texas

1 of 22 in Zavala County

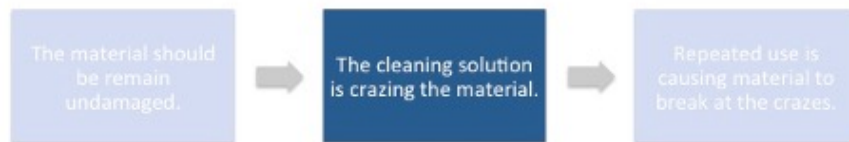


23

Slide 1 of 3.

This researcher used one slide, three layered in main points. It was brilliant.

This set of slides comes from Eric Diep, Iron Range Engineering project, Fall 2013.



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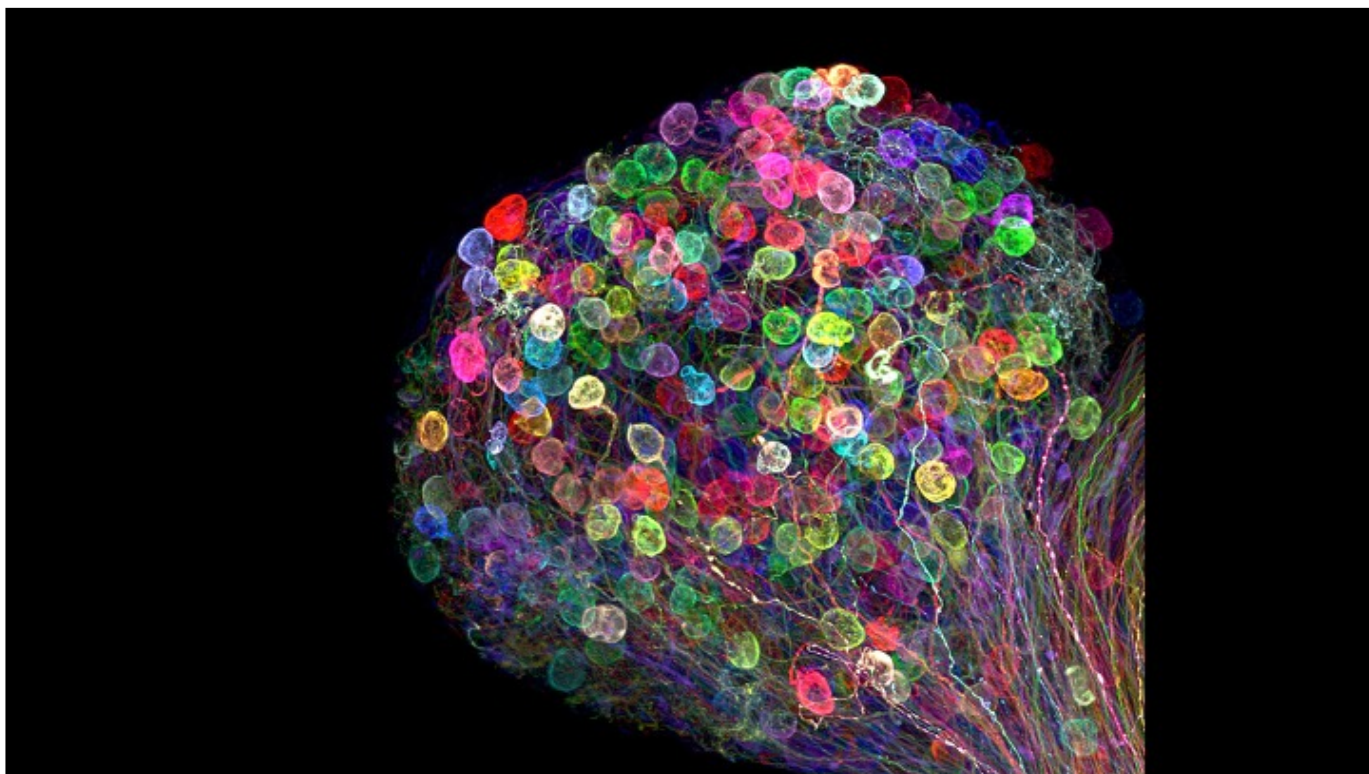
Slide 2 of 3.

Instead of a header with bullets, he chose a more engaging layering example. Notice how each text unit is a short, full sentence with a beautiful graphic.



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- Slide 3 of 3.
- Instead of a header with bullets, he chose a more engaging layering example. Notice how each text unit is a short, full sentence with a beautiful graphic.



There may be times when NO header is needed at all because the image is so compelling.

Image Information:

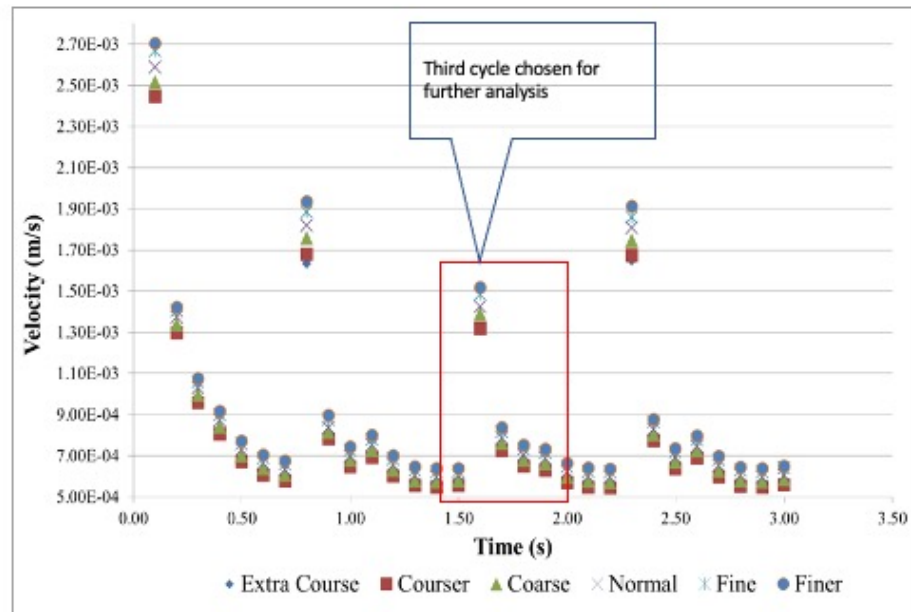
"Individually labeled axons in an embryonic chick ciliary ganglion

[Dr. Ryo Egawa](#)

<https://www.nikonsmallworld.com/galleries/2017-photomicrography-competition/individually-labeled-axons-in-an-embryonic-chick-ciliary-ganglion>

What do I do with a boring graph?

Mesh convergence shows pulsating flow.



This team showed the graph and then indicated right where we should look.
Brilliant!

-----Start team slide talking points_____

-Third cycle chose for further analysis because that is where results reach a steady state and the flow profile is mostly established.

-The fine mesh is necessary for full convergence, however due to limited processing capacity a normal mesh was used for further computations.

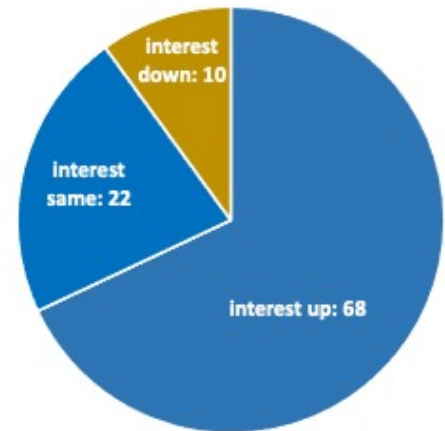
-Fine and normal mesh are similar enough in their results that model is not compromised by the substitution.

-----End team Slide Notes-----

Slide source:**Modeling Flow Characteristics in Carotid Artery Bifurcation Afflicted with Atherosclerotic Plaques**

Spring 2013
BEE 4530 Group 8

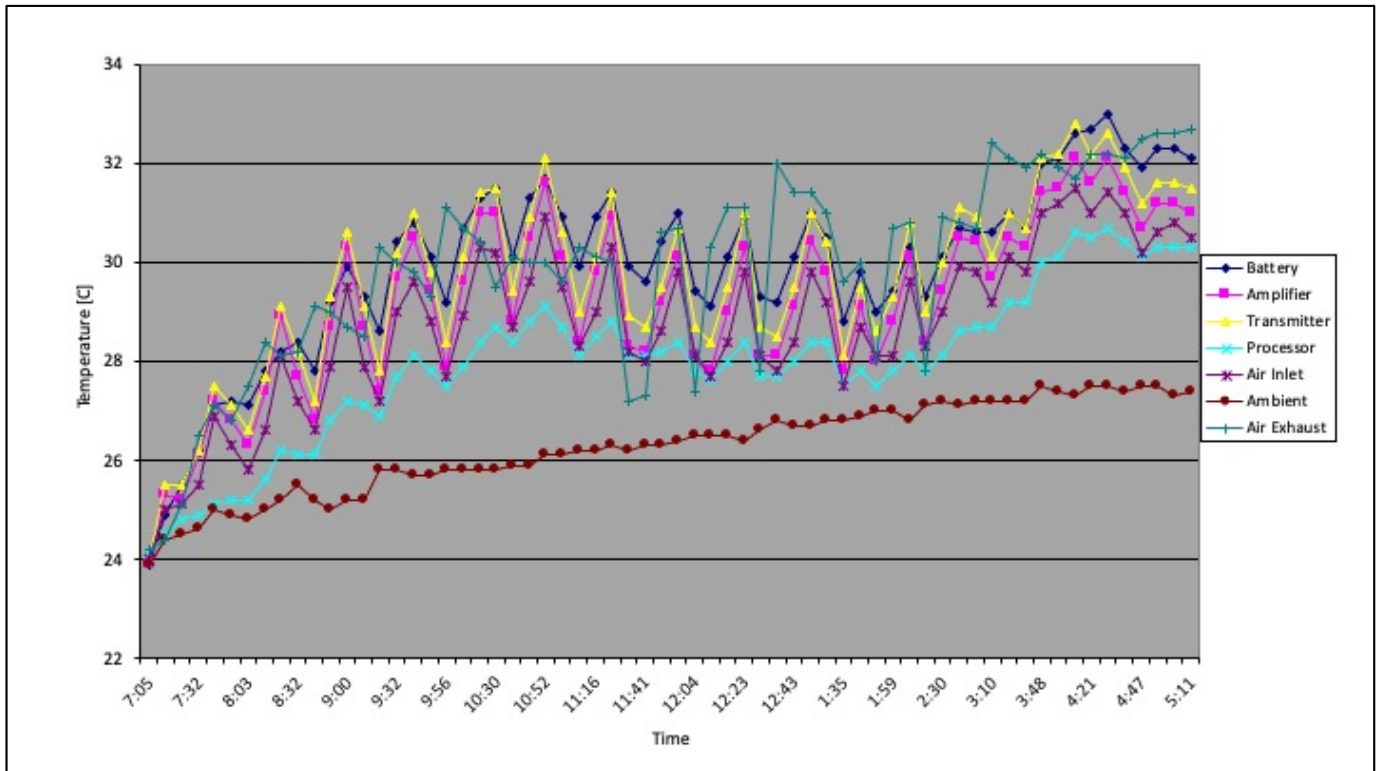
Alexandra Braun, Stellie Ford, Marina Shumakovich, Alden Sonnenfeld



Again, sometimes the lack of a header might be the right choice. Thinking carefully about the positioning of the message and reaching your audience astutely is a key component of finding the right way to make these techniques work for you and your organization.

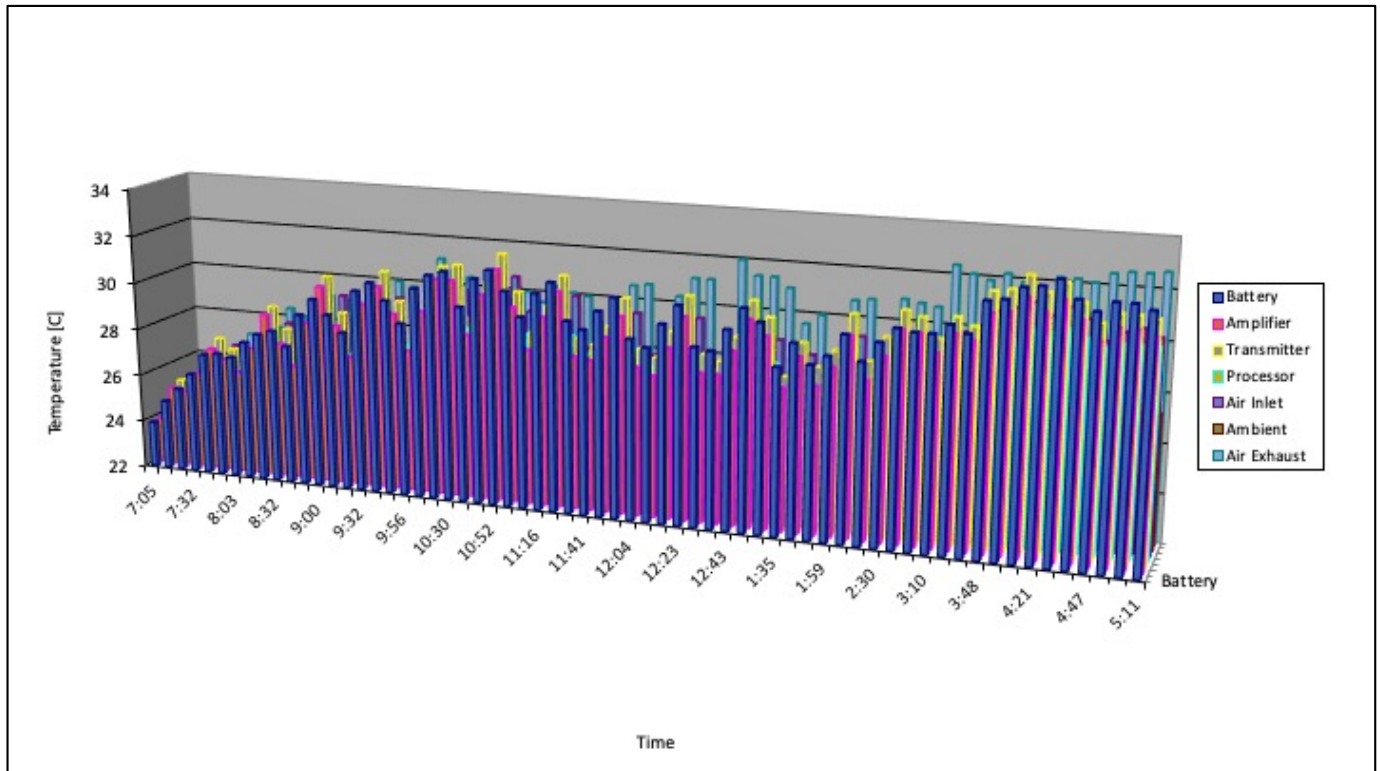


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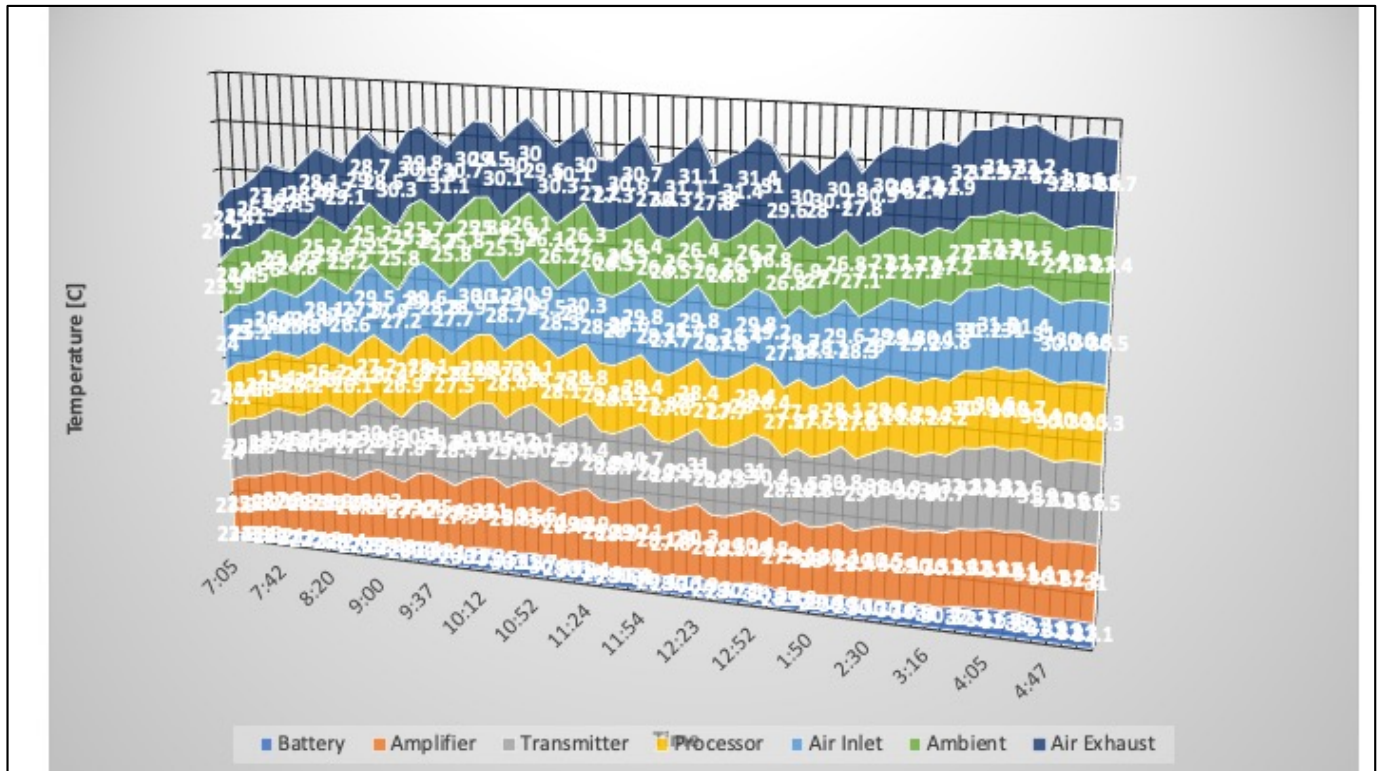


Let's walk through a mini-lesson, where we tame a large data set, allowing the expertise of the speaker to regain focus.

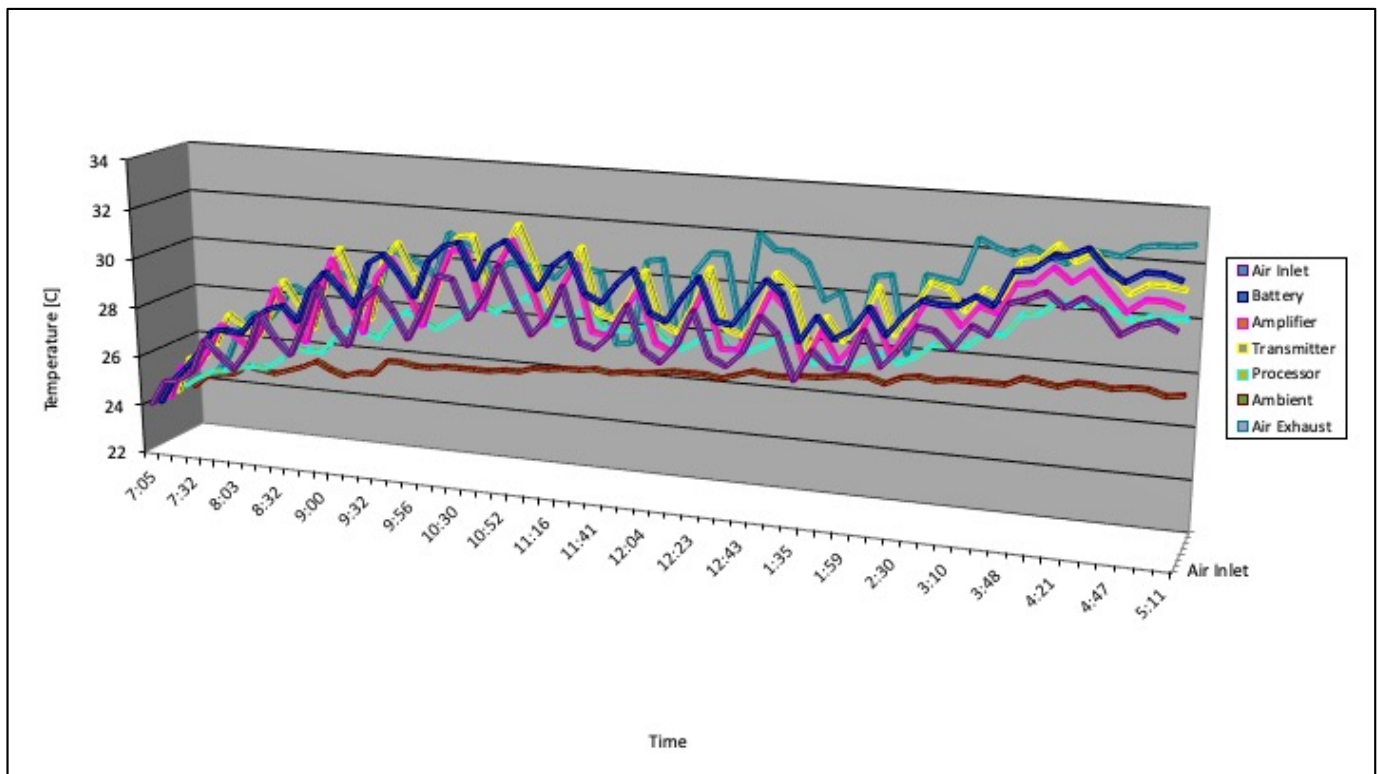
This is the original scatter plot that a tech expert wanted to show. It keeps the default chart settings, it's data-dense, and there's very little way to make sense of this during a fast-moving talk. Each technical expert will have had different training; thus, each will see something slightly different. Your technical messaging has to be focused and helpful so that everyone unpacks the data the same way that you do.



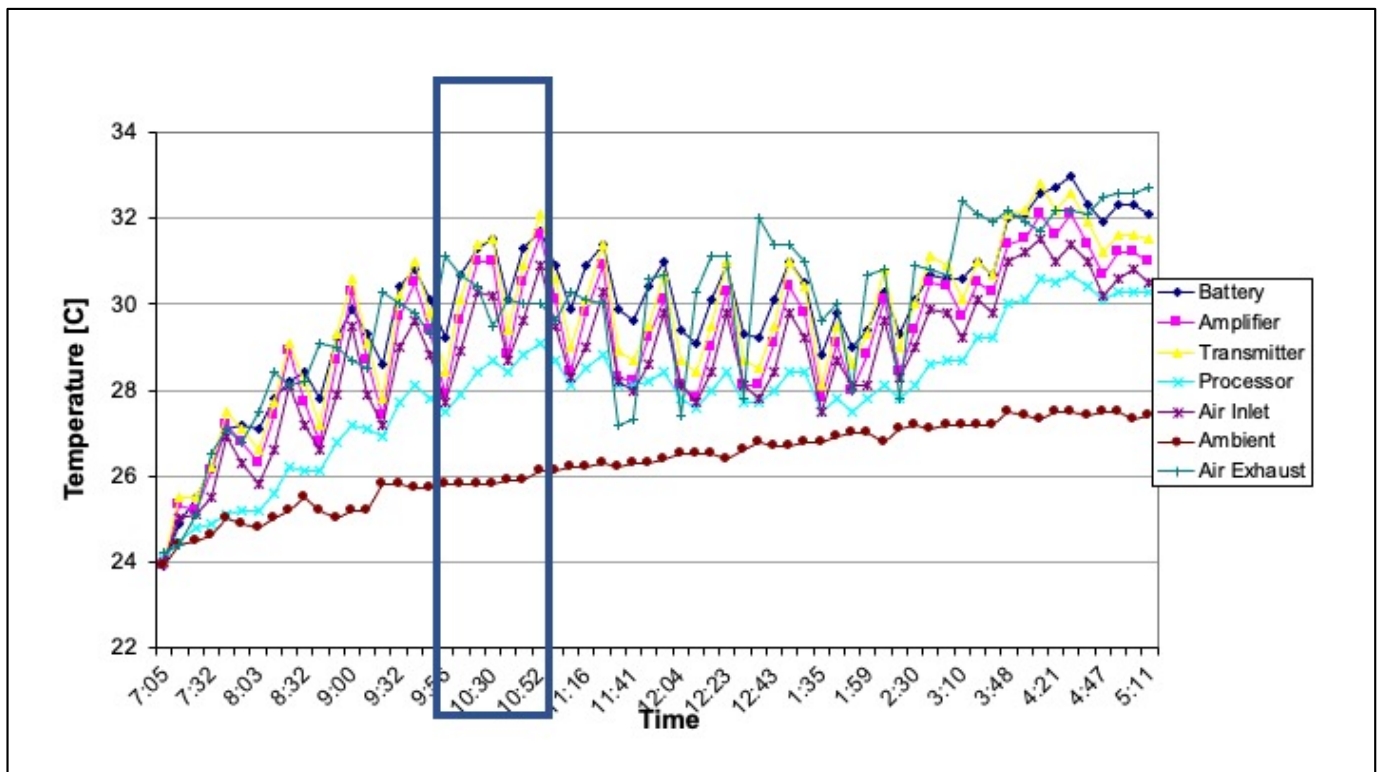
Original scatter plot, made worse by using other chart defaults in the slide software.



Original scatter plot, made exponentially worse by using other chart defaults in the slide software (exaggerated “bad” example to prove a point).



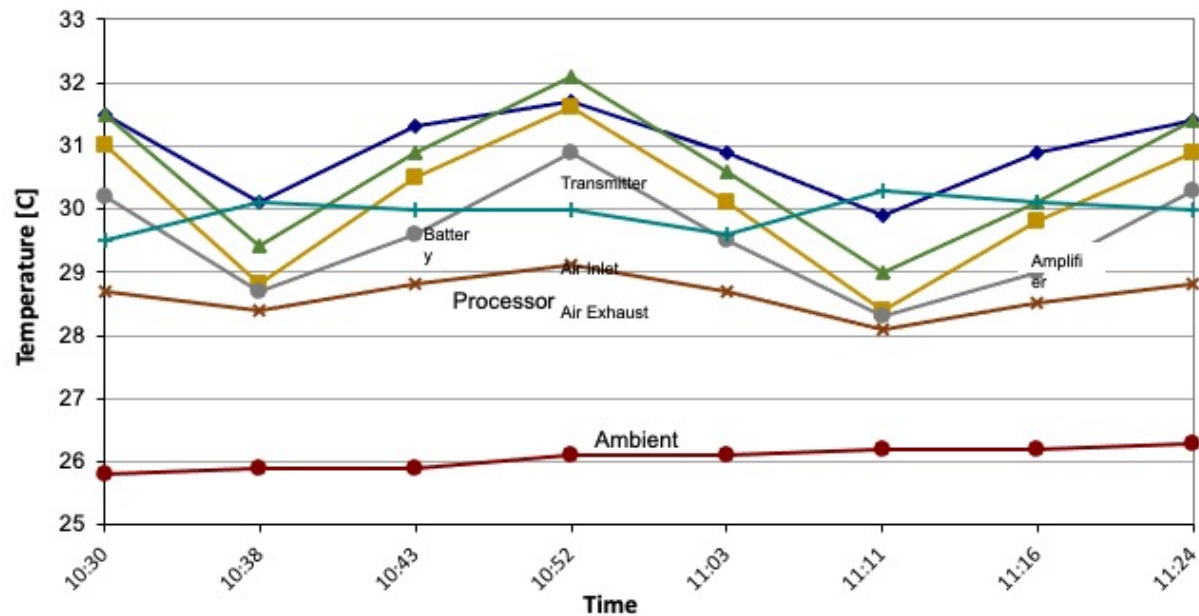
- Original scatter plot...one last junky example.



Let's use a context-building approach for your audience.

You can show all of the data, but if you want to focus them, use a visual tool to do so—such as this box.

Now we want to focus in on a segment of the data to show the transitions between states much clearer. The box shows where we will be zooming in.



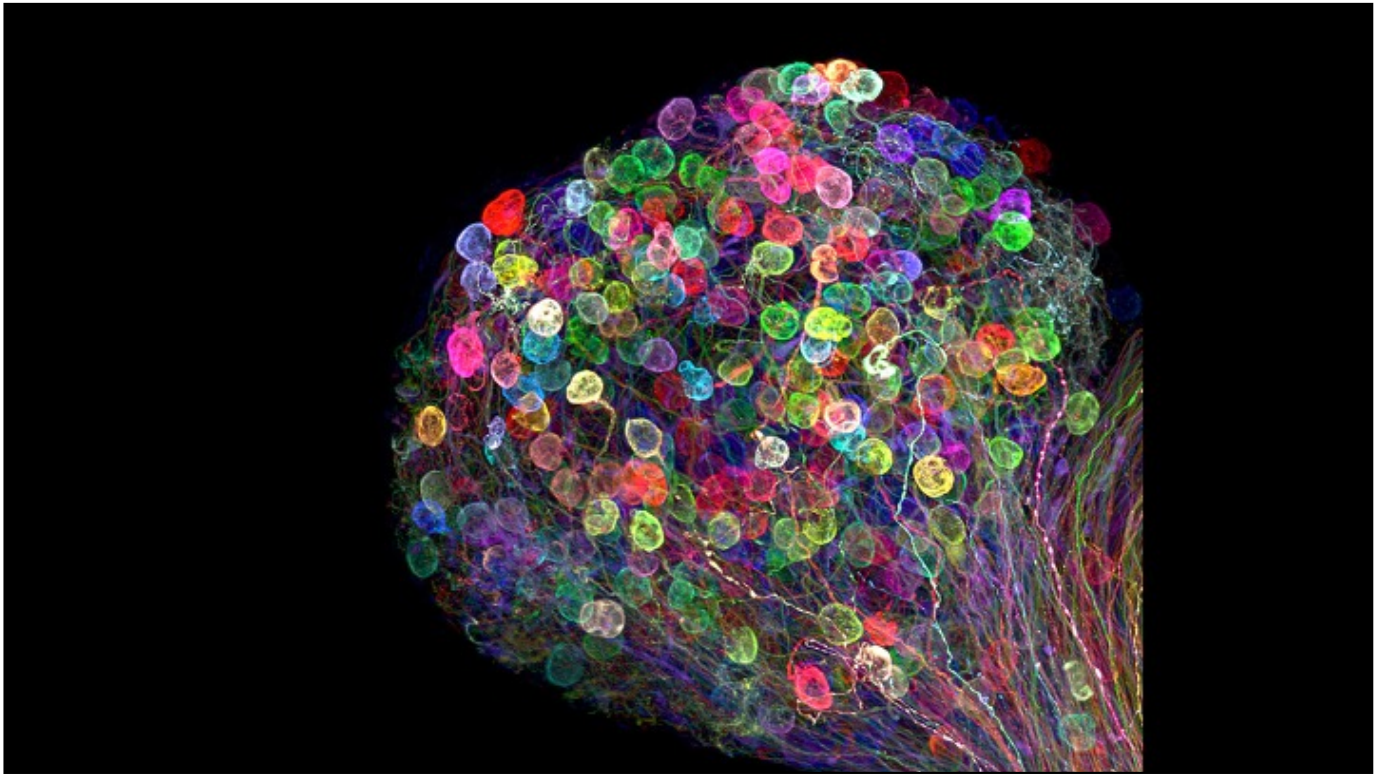
Now, let the audience know that you have magnified that boxed-out segment for closer inspection.

Version 2 of the zoomed in data has the series labels right on the graph, this helps to reduce confusion when the legend symbols aren't clear enough. However, even this version could also get a little cluttered and hard to tell exactly which line is which. What might be your next move to help your audience gain clarity? (discuss)

3

Archival Notes

Let's move on to using archival notes.



You may recall this image from earlier in this presentation.

If this was your talk, think now of a colleague who had to miss the meeting; that colleague emails you and asks for you to send along your slides in order to get the talk's content.

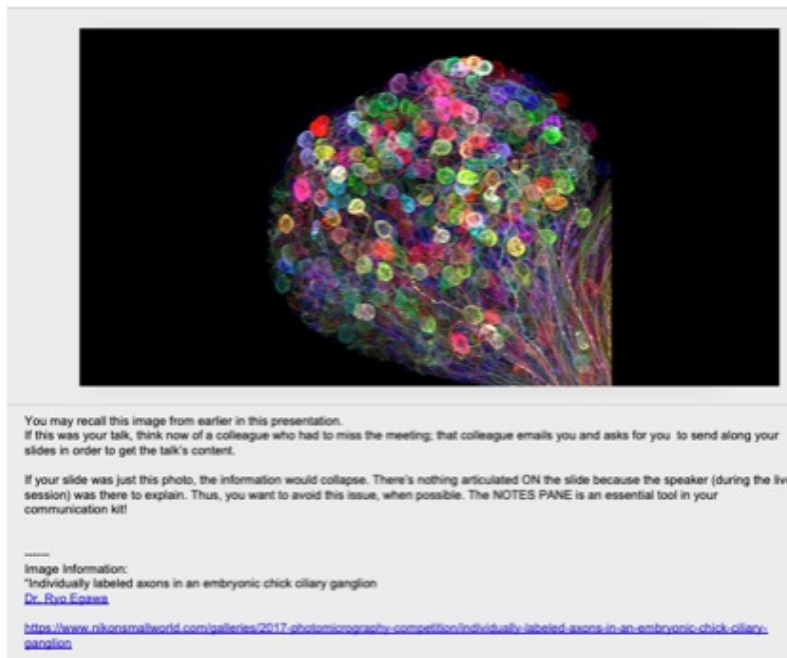
If your slide was just this photo, the information would collapse. There's nothing articulated ON the slide because the speaker (during the live session) was there to explain. Thus, you want to avoid this issue, when possible. The NOTES PANE is an essential tool in your communication kit!

Image Information:

"Individually labeled axons in an embryonic chick ciliary ganglion

[Dr. Ryo Egawa](#)

<https://www.nikonsmallworld.com/galleries/2017-photomicrography-competition/individually-labeled-axons-in-an-embryonic-chick-ciliary-ganglion>



Use the Notes pane to offload all kinds of information, leaving the slide itself clean and simple.

What can you offload?

- Talking points
- Citations
- Document references
- Background information
- Project notes
- Latex
- Equations
- Hotlinked cross references
- And more!!!



In the US, 23.5 million people live in food deserts. Their reality is this.



Not this...



Example

From dosomething.org

- “Food deserts” are geographic areas where access to affordable, healthy food options (aka fresh fruits and veggies) is limited or nonexistent because grocery stores are too far away. Run a food drive (outside your local grocery store!) to support a food bank. [\[1\]](#)
- About 23.5 million people live in food deserts. Nearly half of them are also low-income. [\[2\]](#)
- Approximately 2.3 million people (2.2% of all US households) live in low-income, rural areas that are more than 10 miles from a supermarket. [\[3\]](#)

Sources:

- United States Department of Agriculture Economic Research Service. “Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences.” United States Department of Agriculture, 2009. Web Accessed February 23, 2015.
- United States Department of Agriculture Economic Research Service. “Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences.” United States Department of Agriculture, 2009. Web Accessed February 23, 2015.

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In the US, 23.5 million people live in food deserts. Their reality is this.



Not this...

From dosomething.org

"Food deserts" are geographic areas where access to affordable, healthy food options (aka fresh fruits and veggies) is limited or nonexistent because grocery stores are too far away. Run a food drive (outside your local grocery store!) to support a food bank. ^[1] About 23.5 million people live in food deserts. Nearly half of them are also low-income. ^[2] Approximately 2.3 million people (2.2% of all US households) live in low-income, rural areas that are more than 10 miles from a supermarket. ^[3]

Sources:

United States Department of Agriculture Economic Research Service. "Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences." United States Department of Agriculture, 2009. Web Accessed February 23, 2015.

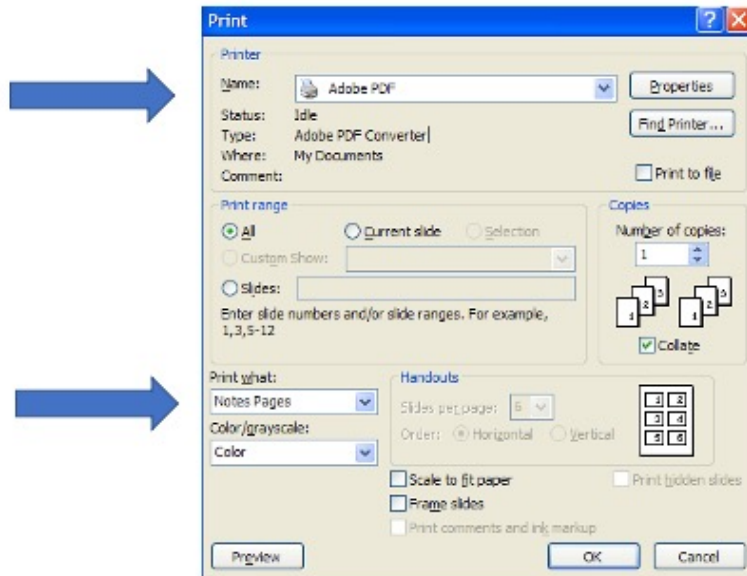
United States Department of Agriculture Economic Research Service. "Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences." United States Department of Agriculture, 2009. Web Accessed February 23, 2015.

United States Department of Agriculture Economic Research Service. "Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences." United States Department of Agriculture, 2009. Web Accessed February 23, 2015.



When you send along, upload, or archive your slide file (as many tech companies do, as this is part of the project's documentation), upload a PDF when possible so that the recipient doesn't accidentally miss the Notes pane if their default settings have that Notes pane hidden.

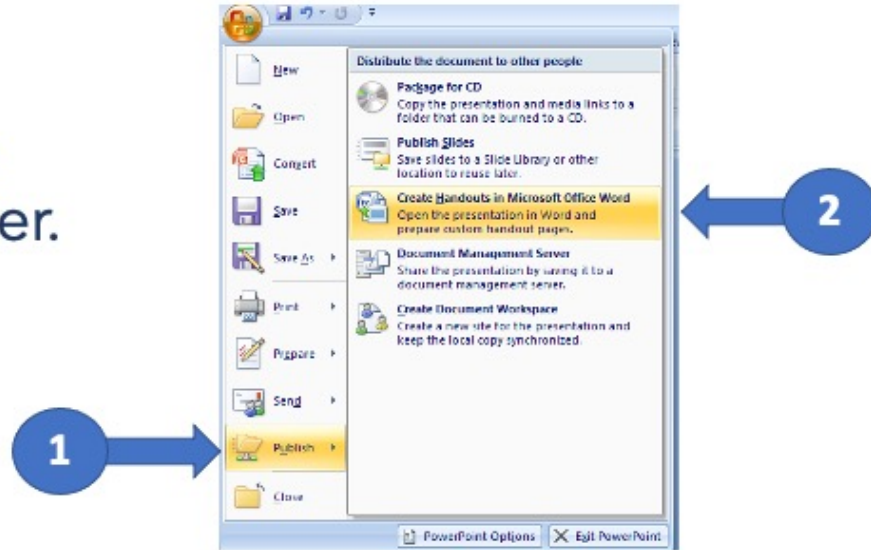
In MS PowerPoint, there are at least two ways to archive with Notes.



Your interface for make such a PDF will likely look different. However, the basic steps are the same.

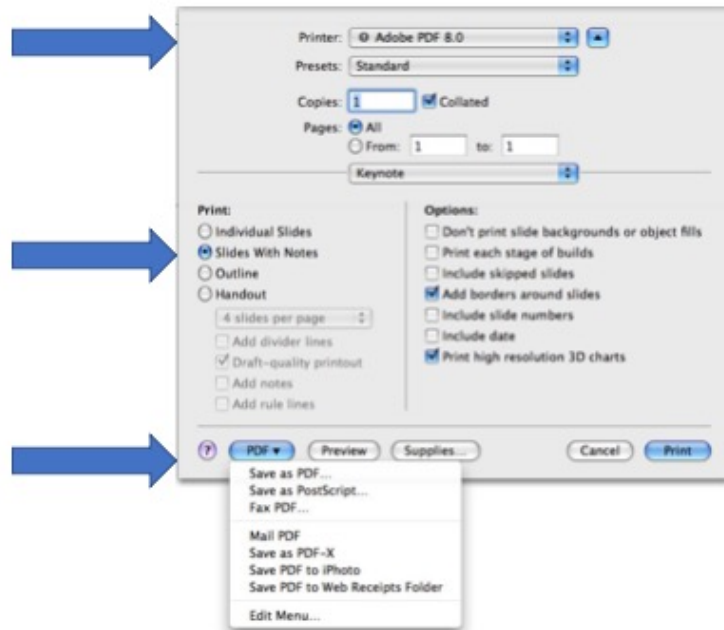
- Choose PRINT.
- Then choose to print to PDF, making sure that you indicate that you desire NOTES PAGES as the format.

Use the
converter.



If you are using the newer Microsoft Suite, the path is slightly different. Choose PUBLISH then CREATE HANDOUTS.

In Apple's
Keynote
software,
follow this
route.



In Apple's Keynote, after choose PRINT, be sure to choose PDF, SLIDES WITH NOTES, and then SAVE AS PDF.

Slide visual



Full notes



Pro Tip: If you are
sending this to clients,
edit carefully!



From dosomething.org

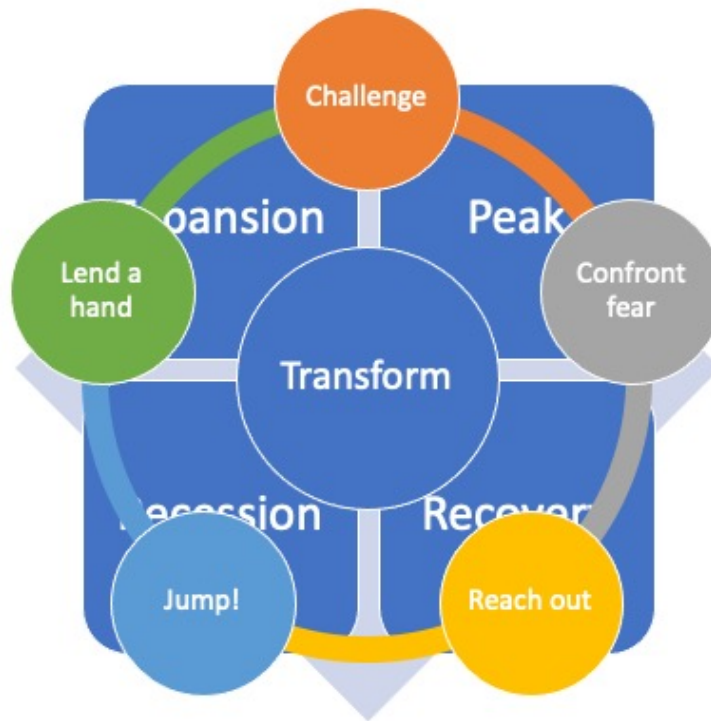
"Food deserts" are geographic areas where access to affordable, healthy food options (aka fresh fruits and veggies) is limited or nonexistent because grocery stores are too far away. Run a food drive (outside your local grocery store!) to support a food bank.
2
About 23.5 million people live in food deserts. Nearly half of them are also low-income.
3
Approximately 2.3 million people (2.2% of all US households) live in low-income, rural areas that are more than 10 miles from a supermarket.¹²

Source:

United States Department of Agriculture Economic Research Service, "Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences," United States Department of Agriculture, 2008. Web Accessed February 23, 2016.
United States Department of Agriculture Economic Research Service, "Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences," United States Department of Agriculture, 2008. Web Accessed February 23, 2016.

As an outcome, your PDF pages will look like this, with the slide at the top and the notes below.

Using this method actually makes your slide deck more complete, whether as a script for you, as archives for an organization, or as notes for a class.

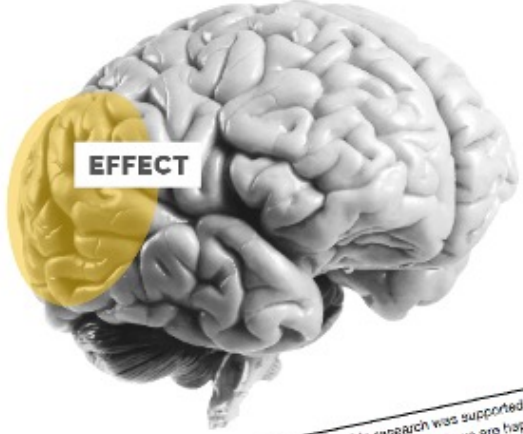


Be aware that creating a PDF can “flatten” any layering that you may have inserted into the slide deck.



Instead, spread out layers over individual slides.

So, what about Prezi?



HUFFPOST

“Harvard researchers find Prezi more engaging, persuasive, and effective than PowerPoint.”

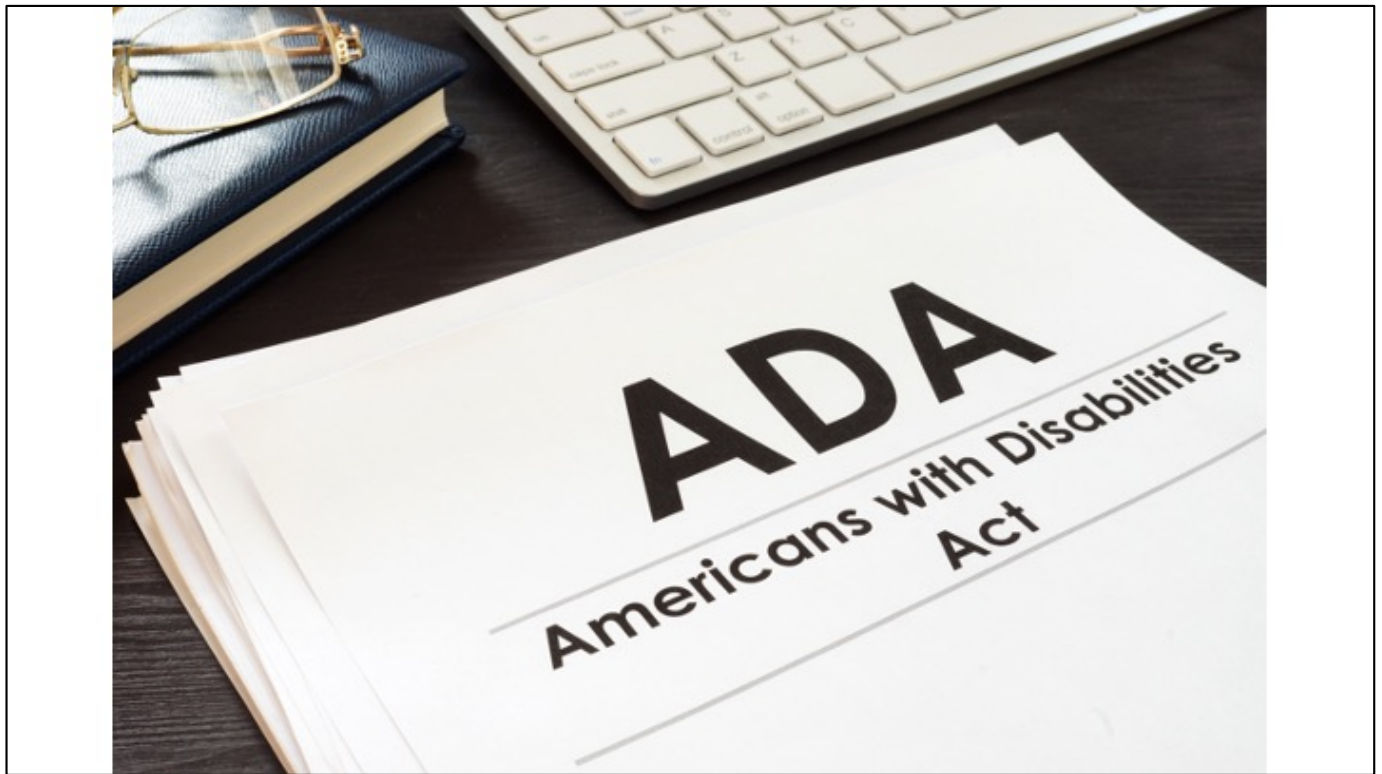
See [here](#)

Funding: This research was supported by a grant from Prezi (<http://www.prezi.com>) to SMK. In the sponsored research agreement (which we are happy to provide) and in our conversations with Prezi leadership, they agreed to let us conduct the study as we wished and publish it no matter what the results revealed. Aside from funding the research, the only role that any employees of Prezi played was (as documented in the manuscript) 1) to provide us with a distribution list of Boston-area Prezi customers (5 of whom participated in the first experiment) and 2) as experts in Prezi, review the background questionnaire to ensure that we were accurately describing Prezi's purported benefits and features (just as PowerPoint and oral presentation experts did the same). No employees at Prezi had any role in the study design, data collection and analysis, decision to publish, or preparation of the manuscript. None of the authors have any professional or financial connection to Prezi or personal relationships with any Prezi employees. We do not plan to conduct any follow-up research on this topic or obtain future funding from Prezi. As evident in the manuscript, we took special care not to allow bias or demand characteristics to influence this research.

Competing interests: This research was supported by a grant to SMK from Prezi (<http://www.prezi.com>), a commercial funder. This does not alter our adherence to PLOS ONE policies on sharing data and materials.

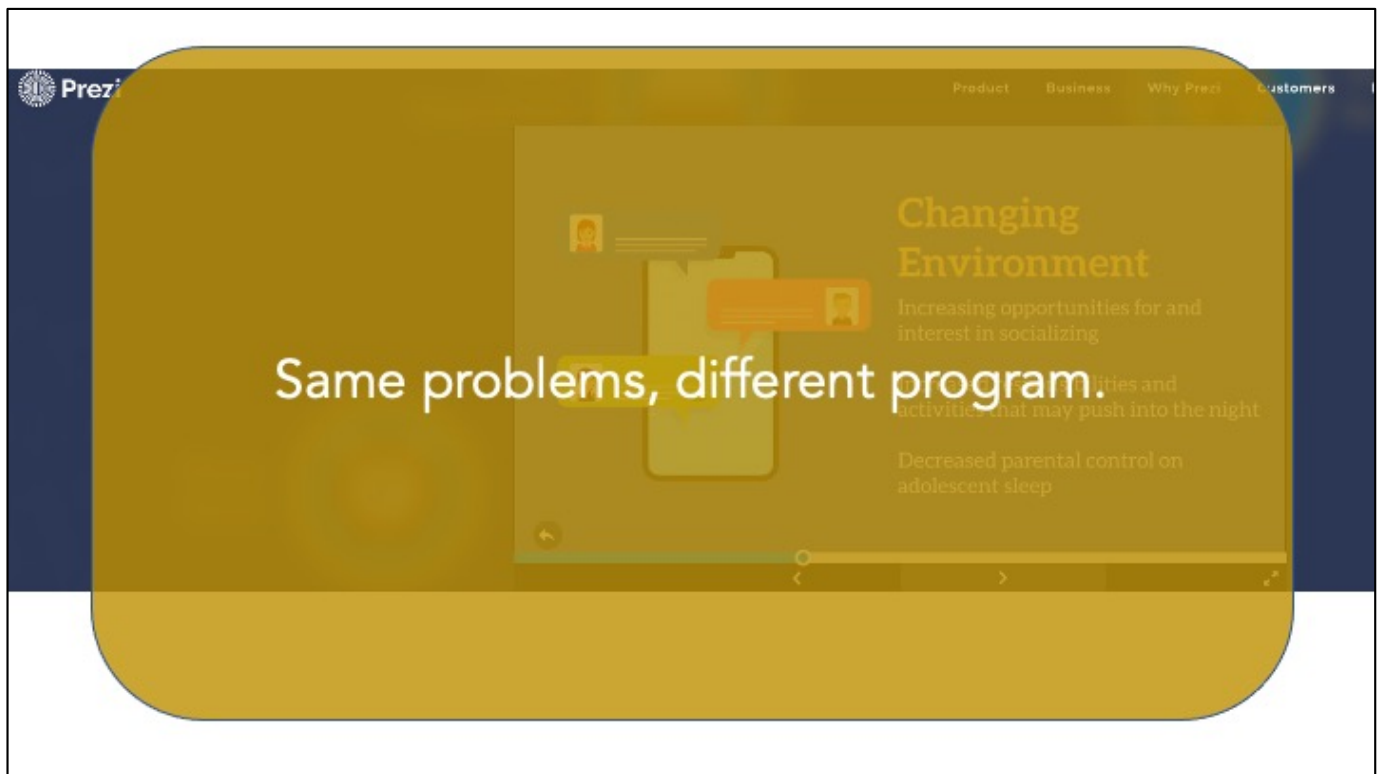
Follow the research, follow the money. Make your own conclusions.

Prezi has some limitations for some uses.



Prezi is not ADA compliant (per their own website) as of this writing.
<https://www.prezi.community/t/conforming-to-accessibility-standards/116/45>

Prezi claims to be compliant with the Web Content Accessibility Guidelines (WCAG 2.0). <https://support.prezi.com/hc/en-us/articles/360046479113-Creating-accessible-content-in-Prezi-Design>

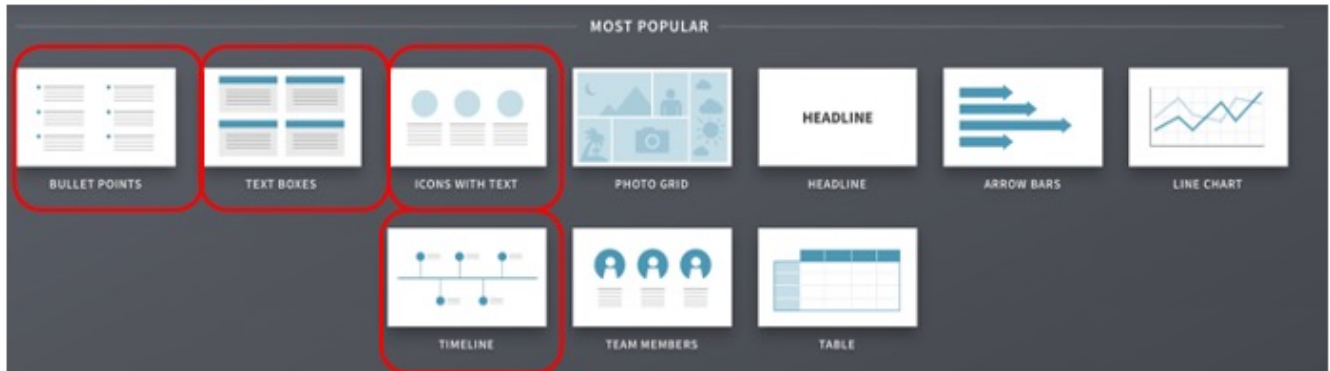


The core concerns about presentation software overriding the expert presence in the room continues, even with Prezi and other new software offerings.

And...beautiful.ai?



The templates are beautiful.



But the designs promote too-small text, too much text, and many of the same problematic approaches to slides (design over targeted usefulness while overriding the speaker) as PowerPoint, Keynote, etc.

Same problems, different program.

Leveling Up: Maximize Presentation Potentials, Both Personal and Enterprise-Wide®

Traci Nathans-Kelly, Ph.D.
Cornell University
Associate Director,
Engineering Communications Program



WEBINAR

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Nathans-Kelly Bio:

Currently teaching for Cornell University's College of Engineering, with deep experience in online modalities for higher education. I have a special interest in social justice and techquity issues. As a member of the Engineering Communications Program at Cornell, I interact daily to help engineers and pre-professional engineers to hone their technical messaging, whether it be via presentations, on paper, in meetings and teams, or online channels. I have worked with practicing professional engineers, technical experts, scientists, and related field experts for over 20 years, helping them to strengthen their abilities to become impactful contributors in their organizations.

She co-authored IEEE's "English for Technical Professionals" online course. She serves on the IEEE Educational Activities Board in the Continuing Education division, and she is on the Editorial Board for IEEE's Teaching Excellence Hub. In 2014, based on her extensive work in the field of presentation design, she co-authored the book, [*SlideRules: Design, Build, and Archive Presentations in the Engineering and Technical Fields*](#), published by IEEE-Wiley.