

Resources for effectively communicating your science

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Preparation

- Take enough time to prepare properly (visuals + message)
- Think about your audience and what they want out of the talk, and then design your talk with them in mind
- Practice to make sure your talk fits the amount of time you have
- This prep is important for a traditional presentation, a poster session, and even a networking event where you have a few minutes to make an impression (obviously not all of these scenarios require a visual component)

Consider:

- **What** is your message? This is the key takeaway your audience leaves with - sometimes it means paring down other content so the message stands out
- **Who** are you talking to? You want to engage your audience, so you need to know something about them: what are they interested in, what matters to them, why do they care about what you have to say?
- **When** are you speaking? Think about the context you are speaking within - don't spend a ton of time on it but be aware of relevant events/papers that affect how your content might be received.
- **Where** are you speaking? It helps to be familiar with the space and the setup/tech you're working with. Does the lighting wash out your slides? Is there background noise? Do you have a podium for notes? Knowing all of this in advance helps make you more comfortable in the moment.
- **How** are you sharing your info? Your approach will be different for a conference poster session vs. a class you TA vs. a public event for science enthusiasts. Are you using slides? Drawing on a whiteboard? Giving a pitch at a networking event? If you are using a virtual platform, are you comfortable with it and familiar with any features you want to use?
- **Why** are you speaking? You have something unique to say that your audience couldn't get just from reading your poster or paper. You should be the focus of your talk, and visuals should support you rather than compete. The audience wants to hear what you have to say and wants you to succeed.
- **Virtual** talks are a bit weird, and that's ok. At this point, everyone knows talking to a screen (and listening to a screen) just isn't the same as an in-person presentation or conversation. Expect lower engagement, and remember that not getting the same feedback you would expect from an in-person audience isn't a reflection on you.

And... but... therefore

- You can still tell a story when talking about your science! The convention with academic papers is to make them impersonal and 'remove' the scientist - you don't need to carry this over into talking about your work (unless you have specific instructions to present that way).
- Humans are naturally interested by stories, and it's one of the best ways to engage people and get them invested in your science quickly. Tell your science story, including new challenges or unexpected results you encountered along the way.

And... but... therefore

Agreement... Contradiction... Confidence

also
plus
equally
identically
uniquely
like
as
too

despite
however
yet
still
unlike
albeit
besides
although

therefore
as a result
in that case
for this reason
in effect
so
thus
consequently

There are many ways to express the same story structure. You are not just limited to and... but... therefore.

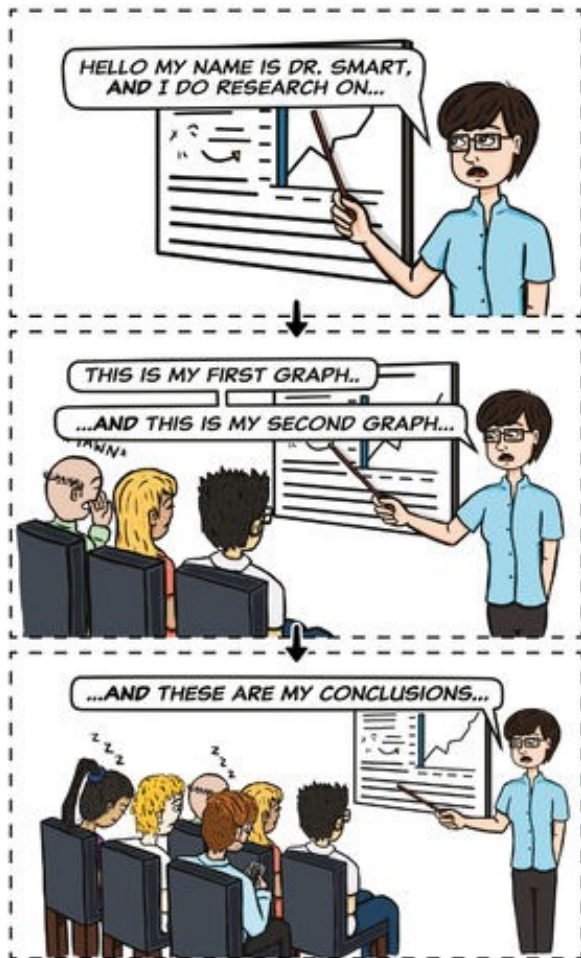
TELL THEM A STORY

HOW TO AVOID THE STANDARD BORING PRESENTATION

BY DR. TULLIO ROSSI
WITH THE ABT TEMPLATE DEVELOPED BY DR. RANDY OLSON

A PRESENTATION IS COMING UP...
WHICH KIND OF PRESENTATION ARE YOU GOING TO GIVE?

THE STANDARD LIST-LIKE PRESENTATION



THIS WAS AN AND-AND-AND*
TYPE PRESENTATION

IT IS A BORING
LIST OF FACTS

IT DOES NOT
TELL A STORY

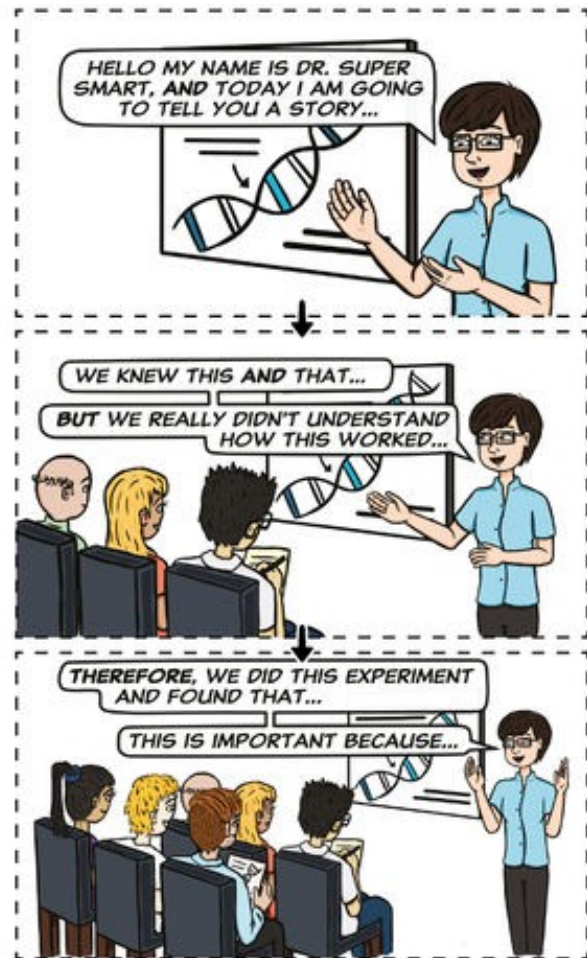
IT HAS NO
NARRATIVE
STRUCTURE



**NOT THE
WAY TO GO!**



THE ENGAGING STORY



THIS WAS AN AND-BUT-THEREFORE*
TYPE PRESENTATION

IT IS
ENGAGING

IT TELLS
A STORY

IT HAS
NARRATIVE
STRUCTURE



THE WAY TO GO!



DESIGNED BY:



SHARE THIS COMIC
WITH ATTRIBUTION TO:
ANIMATE YOUR SCIENCE
(WWW.ANIMATEYOUR.SCIENCE)
NO DERIVATIVES ALLOWED



- AND: SET UP - BACKGROUND
- BUT: PROBLEM - CONFLICT - DRAMA
- THEREFORE: JOURNEY -> SOLUTION

*SOURCE: DR. RANDY OLSON

Content tips:

- **Keep it simple!** Both language and visuals are more immediately understood if they are simple.
- **Tailor your content to your audience.** If you're talking to academic peers you can use more jargon and graphs/ images specific to your field. If not, you will need to tweak the way you talk about things: simpler language and more time explaining scientific concepts. Can you simplify any visuals so that the concept comes across, but details that might confuse non-experts are removed?
- **Some resources for swapping simple language for scientific jargon:**
 - Plain language from Cdn. government: <https://www.btb.termiumplus.gc.ca/tcdnstyl-chap?%20lang=eng&lettr=chapsect13&info0=13>
 - Simple Writer from XKCD: <https://xkcd.com/simplewriter/>
 - Hemmingway editor: <http://www.hemingwayapp.com>

Slide design:

- **White space is your friend.** Packing more information onto slides or posters doesn't increase impact, it makes things harder to see and understand and can overload your audience with too many ideas at once. White space makes it easy for the audience to know what to focus on.
- **One idea per slide!** Total number of slides doesn't matter, as long as you explain them and your presentation flows.
- **Pick a font.** Stick with one font to keep the slides cohesive. Use size and other text effects sparingly for impact. Keep the colour simple, and make sure it is readable against your background (remember, screens will always be brighter than a projection).
- **Avoid visual noise.** Template elements, branding, dates, conference names, etc. are all visual noise that take up space on your slides but don't add any content. Whenever possible, leave them out.
- **Focus on visuals rather than words.** Images are engaging and impactful. Use them to support what you are saying, rather than having competing text on your slides.
- **But conference proceedings are published...** In some cases, academic conventions mean you need to include text on your slides for archiving later. In these scenarios, ask if you can submit a separate presentation/document with the necessary text so you can still use presentation-optimized (visual-heavy) slide deck for your talk.

Visuals:

- **Aim for photos.** Photos are interesting and people are great at immediately gaining information from images.
- **Explain graphs and charts.** Don't assume your audience can understand graphs just from looking at them. Explain the what different parts of it show, and then explain what the data it shows is saying.
- **Be cautious of colour.** Colour is fun but can be distracting. Be aware of how many colours you are introducing with text and graphs/charts, especially if you are working with a branded slide template. Check if your graphs are colourblind friendly here: <https://www.color-blindness.com/coblis-color-blindness-simulator/>
- **Avoid themed/branded slide decks.** Simpler is better. Branded design elements just add non-essential visual distraction. If your institution or collaboration requires a branded slide deck, use the simplest version available.
- **Free stock photos (don't use the first image on the first page - everyone uses that one!):** <https://pixabay.com>
- **Free icons:** <https://thenounproject.com>

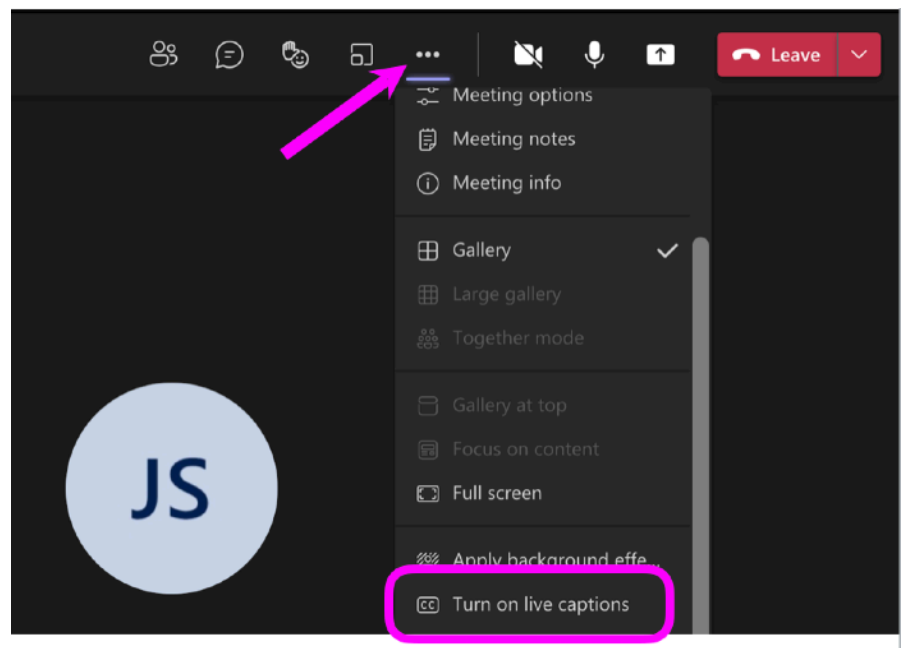
Accessibility:

- **Use a mic.** Whenever one is available, use a mic. Even if you project well and aren't in a huge room. It makes your talk more accessible to anyone with hearing impairments, and it saves you from straining your voice. If no mic is available, check in with your audience to make sure those in the back can hear you. In virtual settings be conscious of hair, clothing, and accessories that may brush against your mic and create static.
- **Use AT LEAST 24 pt font.** Help people read your slides by making the text bigger. This is also a good way to cut down on text - if you're tempted to make the text smaller to fit it, there's too much text!
- **Don't rely on colour to interpret graphs.** Graphs and charts can be a nightmare for people who are colourblind (green/red is especially bad). Don't rely only on colour - use symbols for different data sets, and make sure to also explain graphs well.
- **Explain images.** Images should support your talk, and it's important to still explain them so the audience understands the significance, given that you could have visually impaired audience members.
- **Caption yourself!** Most platforms now have tools that provide real-time captions, making your presentation accessible to those with hearing impairment. It's also helpful with the international nature of physics, because you will often have non-native English speakers in the audience who could miss words with due to pacing/accent. Quality of these tools varies, and if you are organizing a big event with a budget, it is worth exploring captioning services to ensure everyone can participate fully.

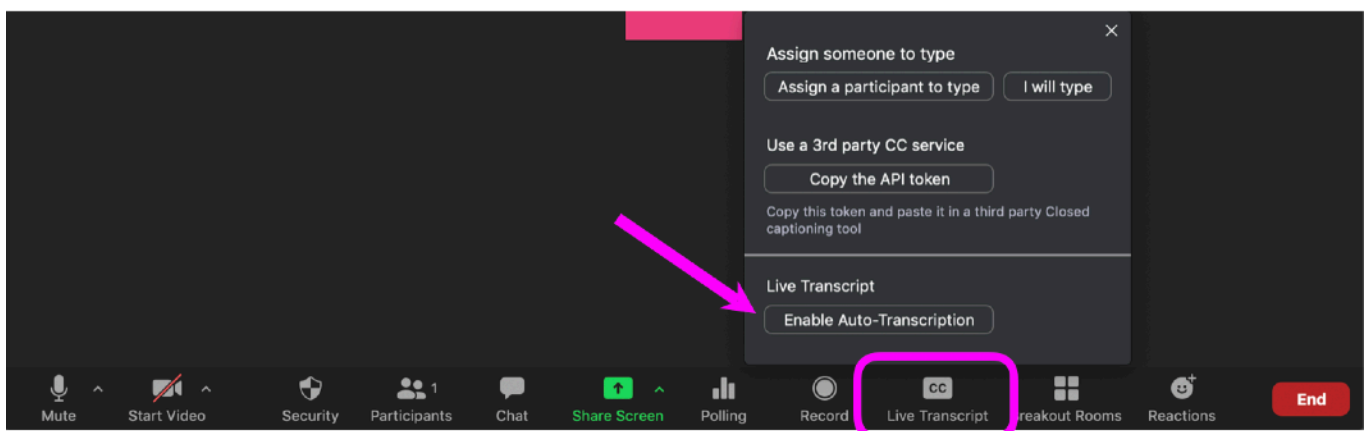
Captions:

- **Google slides:** Read through this document - setup varies depending on OS
<https://support.google.com/docs/answer/9109474?hl=en>

- **Teams:** Select the three dots 'more options' icon, and then choose 'Turn on live captions'



- **Zoom:** Select the 'Live Transcript' icon, and then choose 'Enable Auto-Transcription'



Virtual presenting:

- **Reduce distractions.** As much as possible, reduce background noise and visual distractions. Use a virtual background so no one can see your laundry/ Christmas tree/cat, and turn off appliances that might make noise.
- **Use headphones with a built in mic.** Headphones or earbuds work, and this mic will be better than your built-in computer one. Make sure your hair and clothing aren't rubbing against the mic and creating crackling sounds.
- **Think about time.** Keep in mind that your audience is probably spread across different time zones, and make sure you know what time zone your presentation slot is in. Be aware of when in the schedule you are too - if people have been sitting in front of screens for a long time already or it's the end of the day, don't be afraid to start off with a quick stretch break to help beat screen fatigue.
- **Try the software in advance.** There are many different virtual meeting platforms, and each one has slightly different quirks. If possible, try it before you present so you are comfortable with the features and know what to expect.
- **Your audience will probably give less feedback - that's ok.** One of the great things about presenting in-person is being able to easily and quickly read your audience's reaction and energy. In virtual formats, they will probably be quieter and it can feel like you are talking into a void. That's normal! Your audience is still listening and engaged, you just aren't getting those cues as easily, especially if you are sharing a screen.
- **Make it interactive.** Most meeting software platforms have options for participants to chat, enter breakout rooms, participate in polls, etc. Get creative when thinking about how to you can include activities for your audience.

Confidence

- **You are the expert.** You are speaking for a reason, and your audience wants to hear what you have to say. They want you to succeed! You have something unique and important to say. Own your time, and say it.
- **Don't apologize.** Your audience doesn't know what you're planning to say in your talk. If you miss something, don't apologize. You can work it in later if you want (I wanted to mention...), but you're the only one who will ever know if you left something out.
- **Fake it 'til you make it.** If you're nervous, don't tell your audience. They want you to do well, and you want to do well. Getting up in front of them and leading with 'I'm sorry I'm really nervous' lowers both of your expectations. Even if you're jittery at the start, it will get smoother as you go along.
- **Nerves and excitement feel the same.** If you get butterflies or sweaty palms before you present, remember this: physically, being nervous and being excited feel the same. If you get this feeling, you have the choice to decide what it means. Tell yourself you're excited, not nervous, and you can trick your brain out of the nerves!