Pint of Science – speaker guide

Tips and hints for an engaging, exciting talk

This document collects together advice, suggestions and guidance for creating and delivering a truly great Pint of Science talk and is particularly useful for those that have not given many talks to a non-specialist audience.

Please note that whilst it is unlikely you will be able to fully utilise and implement all these suggestions and approaches in your talk, each one can be applied to any area of science or research. It’s really a case of seeing which ones work best for you.

Basic description of a Pint of Science talk

- Length: 20 - 30 minutes (30 minutes maximum – if you overrun you may be interrupted by the host)
- Audience: Mixed, general audience, primarily non-professional science enthusiasts who know nothing about your subject area
- Style: Informal talk supported by image based (rather than text based) slides and interactive visual aids wherever possible
- Content: Pint of Science talks aim to convey the latest issues being tackled and questions being answered in laboratories and universities. We are not giving the public a basic foundation in physics, chemistry or biology or a history lesson on the key discoveries in any particular field – though feel free to include a short review of relevant scientific principles if (and only if) it helps explain the latest research you are carrying out
Hints and tips

Create a narrative – the best talks pose a central question, mystery or paradox which the speaker then attempts to answer. People like stories, especially those that have drama or tension, and involve going on some sort of journey. This could be a journey back through history, a journey across the world or a more intellectual journey, exploring the answer to a particular question. One way to keep everyone following the narrative is to utilise ‘What have we learnt so far’ slides at certain key points during the talk – see signposting below.

Signposting – explain to the audience in advance where a talk is going to take them and then take them there. It gives a structure and is particularly helpful when you have an audience of varied backgrounds and expertise in your chosen field. Your colleagues in your department might lose interest if they start hearing a series of basic scientific principles which might be vitality important to others less familiar with the topic. However by declaring from the outset your intention to cover some of the basics before looking at the big cutting edge questions facing the field, you will keep everyone happy.

Similarly those interested in only the real headline implications of your research will forgive a 5 minute look at the more technical aspects of the research process, and stay engaged if they know that you will get to the more pressing implications of your findings shortly after.

There are generally two key components to good signposting:

1. The actual signposting at the start where you describe the journey the audience are going to take, and if possible a list of big fundamental questions you are going to attempt to answer (bear in mind here the rule of three - https://en.wikipedia.org/wiki/Rule_of_three_(writing) – which applies just as well to talks as it does to any other form of communication)

2. Referencing back to the journey throughout the talk – as you go through each part of the journey or answer each question, you need to refer back to the journey so attendees can follow where they are and how what you are saying fits into the structure of the lecture they were promised at the start.

Capturing the timeliness of a talk – we want the audience to feel that the research being described is highly relevant to the world today and tomorrow. A great way to do this is to start the talk by jumping straight in at the most recent part of the story - something that has just happened or something that is just about to happen – you can then go straight back to where it all began and work back to the present day throughout the rest of your talk.
Make it personal - this is your talk so people will want to learn a bit about you and your career, as well as the scientific research programmes you are involved in. Why did you get into this field and how has the field changed in your time researching this area? Your interest and involvement in this area of research can then be charted alongside the main central story of scientific progress.

Make it relatable – any opportunity to relate what you are saying to recent / well known events – should be taken. Phrases like “You will have seen on the news recently...” or “Many of you will have seen the film....” demonstrate the relevancy of your research, and provide a re-engagement point for anyone whose got lost that will make them sit up and draw them back in.

Avoid simply listing a series of scientific discoveries - by thinking of alternative ways of telling the story of new developments and breakthroughs e.g. “…This was how people understood light to behave until one day on the 1st of August 1812, a discovery was made in Cambridge that changed our understanding completely. The man responsible was.......” Anecdotes about the stories behind scientific discoveries are a good way to avoid simply listing a series of scientific principles. The best talks shift between scales of time and levels of detail – mixing up grand ideas with more specific accounts of particular discoveries / events that happened to real people.

Bring to life the amazement/ craziness of some aspects of your science – by explaining what those theories or process would mean / look like if we could observe them happening in our daily lives. This is particularly applicable to quantum physics but can also be used to describe the behaviour of cells and viruses, or the properties of engineered nanoparticles, to name but a few.

Avoid tables and graphs unless... they genuinely add to the point you are trying to make (see example below) rather than just reinforce or evidence a statement you have just said. People in the audience will be believe you if you tell them the result of the experiment was x – you don’t need to evidence it. If you do use graphs or tables make sure you don’t just copy and paste the one from your academic paper – annotate them using large font, jargon-free labels.

Demonstrate large / small numbers visually - if the point you are making is how big or small a number is – don’t write it out as 2.5x10^{23} – write out all those 0s and let it take up the whole slide. Similarly don’t use logarithmic graphs if you are trying to convey the large difference between two values – show it how it actually is, even (or especially) if it means making the graph look ridiculous- as it helps gets across the point.

Slides – if possible – try and keep the text on slides to a minimum. Don’t worry about people being able to follow the slides from just the slides themselves –
nobody will be asking for them after the talk. The focus should always be on what you say with your voice, not what you say on your slides. Ideally the slides should frame the points you are trying to make, though there will of course be times when a visual image better describes what you are trying to say.

**How should you deliver the talk? – Principles of good presentation skills:**

- **Talk at a moderate pace** – slightly slower than your usual conversation talking voice will be fine.

- **Do not read your slides verbatim** – address the audience directly and make eye contact with them whenever possible. When you want them to look at something in particular on your slide use a laser pin or simply turn around to face the screen yourself – when you turn back people will automatically revert their gaze back to you.

- **Move around** – use lapel microphones if possible so you shouldn’t feel tied any one spot.

- **Feel free to be expressive with your hands** – radio producers often encourage guests on their show to be overly expressive with their hands as they find it naturally helps how clearly they come across.

We hope these tips have been helpful, thank you for speaking once again.

**Pint of Science Team**