



2022-04-02

How to Prepare for an Academic Presentation.

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An important part of an academic job is to share the results of our work with peers. We are expected to present our work at conferences, but often without any formal training. I've now given more than 60 scientific conference talks, seminars, and colloquia, as well as many public outreach lectures, sometimes with audiences as large as 500 people. Here are a few tips on how to get started with your first conference presentation. It's geared towards oral presentations with slides, but some of the advice can be adopted for poster presentations.

Before you begin

1. *Who's your audience?* The most important step before you begin is to decide at which level to pitch your talk. Are the audience members mostly experts in your specific subfield? Are they a collection of people with varying expertise and seniority? Are they mostly undergrads?
2. *What works and what doesn't?* Try to think deeply about talks that you've attended in the past and reflect on what you liked and didn't like in these talks. My pet peeve is when someone's says "As we all know", because you risk excluding a large fraction of your audience.

Example of how to structure your talk

1. *Title slide.* List collaborators, title, your name, affiliation etc.
2. *Intro.* What's your topic? Think about how you would introduce this to someone who has never heard about your subfield before. Chances are that several people in the audience haven't.

3. *Why should they care?* Make sure to motivate your work. What is the bigger picture? Why should the audience care about this topic?
4. *What is already known?* What work has already been done? Who did it? Give the scientific context.
5. *Which new questions do you pose?* How does your work fit in to existing literature? Why are your questions important to ask?
6. *Methods.* How did you tackle the question? You don't have to give every single detail in your talk, and you can jump around a bit in the order of all of this.
7. *Results.* What did you find? How does this fit into the general picture?
8. *Looking ahead.* What are the next important steps?
9. *Summary slide.* Some people start with the summary to ensure that they have people's full attention for this slide. Remember to leave up your summary slide during questions.

When you make the talk

1. *Software.* I personally use Keynote, but there are many options. Pick your favorite and get comfortable using it.
2. *Colors.* Use colors with intention. Keep the same color scheme throughout.
3. *Keep it simple.* People can't read and listen at the same time. Avoid too much text. I like filling a whole slide with just one single figure as I explain it.
4. *Use titles with intention.* Avoid writing "Results", "Methods" etc. as your slide titles. Instead describe your slide. This could be: "Findings from the 3 x 3 Mpc hydrodynamical simulation".
5. *Know your slides:* Be ready to explain the plots on your slides, such as the data points, axes, colors, source etc.

6. *A few fonts per talk.* This could be one font for titles, one for the main text and one for references. Make sure to have axes labels on each plot and that the axes labels are easy to read. I often cheat and make my axes directly in keynote.
7. *Make the talk color blind friendly.*
8. *Don't distract from the science.* Yes, wild transitions can be fun, but make sure they don't steal attention from what's important: the science.

When you present

1. *Face the audience, not the screen.*
2. *What are your hands doing?* Make sure they're not fidgeting with keys or other objects that can distract from your message.
3. *Make eye contact with the audience.* Look at different people. This portrays calmness and confidence.
4. *Dare to pause.* This is tricky, especially if you're a bit nervous, but taking the time to pause after a statement can be a powerful way of driving home a point.
5. *Practice.* Practice until you know your transitions well and until you're on time! The latter is crucial.