

Tips for Preparing a Good Presentation

General Considerations

- Identify the points you want to get across to your audience, and build your presentation around those. Make sure that each slide contributes towards your goal, and avoid adding extraneous material.
- Be engaging. Speak loud enough to be heard in the back of the room, and address and look directly at the audience during your presentation. Be enthusiastic.
- Stay within your allotted time, do not run overtime. Leave time for questions. Do not rush through your presentation; only include what you can present within the time you have given instead (prioritize). Use your time wisely (typically, you will need a couple of minutes at a minimum per slide).
- Learn from others. When you attend other seminars, ask yourself if you liked them, and what you learned. Identified what worked and what didn't. Incorporate the good ideas into your own presentations.

General Organization

- Pick a title that is simple, short, and informative. Avoid generic words such as "Investigation", "Study", "Novel", "Unique", "Facile", "First", etc.
- Organize your talk. A typical talk is structured to have the following sections:
 - Introduction
 - Experimental details (brief, only if needed)
 - Results and discussion
 - Conclusions
 - Acknowledgements
- The organization of a talk does not necessarily follow that of a written publication. Only the information needed to make the central points should be included.
- Organize the information in a logical sequence, building the arguments that support your final conclusions. This sequence may not necessarily be the same as that in which the experiments were performed or reported in a paper.
- Gauge your audience and prepare your presentation at their level. Avoid adding very general information, but do not start at a level beyond that of the majority of your audience.

General Presentation Formatting

- Prepare simple slides, avoiding overcrowding. Do not use the edges, especially the bottom, as those usually get cut off by projectors or cannot be seen in the back of the room.
- Build each slide around one single point, which you should include as a bullet phrase. Ideally, use a single figure or diagram to convey that point.
- Use a simple background that does not interfere with the text or figures.
- Make good use of graphics, color, and animations, but do not overuse those. Make sure that your graphics can convey the same information even if they were converted to a grey scale. Do not add extraneous cartoons or animation such as dancing atoms in a corner of the slide if they do not contribute to the point of the slide; those can be quite distracting. Do not try to be "cute".
- Use large characters for the text and figure labels. They all should be readable from the back of the room.
- Avoid acronyms or other jargon. If needed, define them the first time you use them.
- Include all key information in your slides, do not rely exclusively on your verbal presentation. This is particularly important if English is not your first language.

Introduction

- Introduce the problem properly, to bring your audience up to speed.
- Target that introduction to your audience. Do not start with very generic statements such as "The need for energy sources is important for society...". At the other end, do not jump directly to the specific technical information of your talk if your audience is not familiar with the field.
- Place your work in context, citing previous art. Only provide information relevant to your work and the points you are trying to convey, do not survey the whole field.
- Identify exactly what the unresolved issues in the field are that you are trying to address, and point to which ones and how you are going to address them.
- Clearly state your hypothesis if you have one (them).
- You may provide a brief central conclusion from your work here as a way to entice the audience and tell them what to expect.
- Provide an outline of your talk, and use it throughout the talk to identify each stage of the presentation (if the talk is long enough to merit this).

Experimental Details

- Only provide the experimental details needed to understand the presentation.
- Be clear but brief. Only include information relevant to the data you show later in the presentation.
- Explain the details of any crucial experiments, especially if they are not common or difficult to understand. Use this section to facilitate the understanding of the data to be presented later.
- Use simple diagrams when possible. Avoid adding details to those that are not crucial to the understanding of the data, as those clutter the drawings and are distracting.
- Explain the type of data to be reported, and how to interpret and understand them. Explain the type of graphics you will be using to report the data if they are in a unusual format.

Results and Discussion

- The presentation of the data and their interpretation are typically done together, in each slide. In this, an oral presentation often differs from a written publication (where the discussion is provided after all the data has been presented).
- Try to introduce one single point per slide. Make that point with simple graphics if possible. Avoid using too much text, and add that in the form of short bullet points. One picture speaks a thousand words!
- Highlight the main conclusion of each slide prominently in that slide.
- Present the data in sequential fashion, to build on the knowledge introduced in the previous slides.
- Avoid repetitive data presentation in similar format. If many similar spectra are to be reported, show representative raw data and then figures or tables that summarize the information extracted from the full set. The audience often gets bored with graphs that look similar, and have no capacity to keep track of subtle changes among many similar-looking graphs.
- Data processing, to avoid presenting excessive raw data and to extract the key information from those, is critical to convey your information in a more effective way, and to show that you have worked hard to understand what is going on.

Figures and Tables

- Figures are the main vehicle to convey the data in most presentations. Place particular effort to prepare them in a clear and informative manner.
- Include in each figure only the information that you need to make your point; remove everything else. Make the figure as visually simple as possible.
- Place particular effort on figuring out the most visually clean and clear way to convey your data and your point graphically. This is one of the most important factors to improve on the quality of a talk. Simple, clean graphics where the conclusion can be extracted from a quick glance are best.
- Avoid the use of tables, they are hard to read on the fly and are not, in general, visually helpful.
- If there is a need to use complicated figures or tables, highlight the numbers or data you want the audience to focus their attention on. Use arrows, boxes, etc.
- Make sure to label your figures properly, indicating the variables and units in each axis, with big letters. Also use big symbols and thick lines; they need to be visible from the back of the room. Label all traces, data points, etc.
- Take the time to briefly state (verbally) what is plotted in each figure as you introduce them.

Conclusions

- End with a slide or two of conclusions.
- Briefly summarize the points you have tried to convey in your presentation.
- Be specific, avoiding generic statements such as "we have demonstrated that this technique is useful to study problems in catalysis", or "studies such as this help develop better energy sources".
- Instead, provide a list of the unique and new points that were learned from your presentation. Make the list short, and use short sentences for each.
- Tie your conclusions to your hypothesis, and to the points you wanted to convey. The conclusions should match the goals identified in the introduction.
- Has the hypothesis been proven? If trying to resolve an existing controversy, what makes your new information different?
- Many people would say that a good presentation is one where you tell your audience your message (in the introduction), you tell it again (during the presentation of the data), and you tell them a third time (in the conclusions).
- Optionally, you may end by pointing out what is missing, what the outstanding issues are, and what the future research will or should be.

Acknowledgements

- Acknowledge all people that participated in the research, and the agencies providing the financial assistance. You may chose to do this at the beginning or at the end of the presentation, and also identify specific people with specific data. When possible, identify what each individual contributed to, specifically.
- Make sure during the presentation that you identify what data is yours and what comes from others or from the literature.
- If borrowing data from the literature, provide a proper citation.
- Do not plagiarize text or data. Extensive use of text from other sources is to be avoided (even in the introduction). When done, the text should be placed in quotation marks, and properly referenced. Avoid such quotations for generic statements or non-critical information.

Questions

- Leave time for questions from the audience.
- Make sure that you listen to the questions carefully and understand what is being asked before you start answering.
- Provide a direct answer to the question.
- Start with a brief answer first. If the question requires a yes or no answer, start with that. You can then expand and explain further after that, but you need to convey your answer quickly first.
- Be brief and concise.
- Do not expand on other subjects not relevant to the original question.