Introduction

- Spoken and written communication are key skills for scientists.

- They are often required to give formal technical presentations describing their work.

- The effectiveness of these presentations can have a significant impact on the way they are perceived by their managers, colleagues and peers.
  - People can be much more influenced by your 20-minute description of your research than the 20-page paper on the same topic or the 20-weeks you spent generating the results.

- Presentations of various forms are often required, e.g. internal departmental research seminars, updating your supervisor on progress, defending a thesis, technical sales, job interviews, media interviews.
**Introduction**

- People are often uncomfortable with speaking in public.
- Fears and nervousness can largely be overcome, and the quality of presentation improved.
- The key to improving as a speaker is really simple: you must decide that you want to be better!
- Various techniques can help to improve presentations, but largely speaking is something you learn by doing.
- This is not something you learn once and then use. Improving your presentation skills is an ongoing active process. Reflection:
  - What could be have been better about my last presentation?
  - What went really well?

**Observation**

One of the best sources for learning effective presentation skills is to observe other presentations:

- What is being done well?
- What could be improved?
- Is the material well organised?
- Do the visual aids support the message?
- Has the speaker chosen clear language?

You can learn from every speaker.
Preparation

One of the key elements of delivering a successful presentation is the preparation beforehand.

This can help to direct your energies from worrying about yourself (“stage fright”) and in the direction of giving something useful to the audience.

- Material to be covered.
- Audience.
- Time available.
- Visual aids.

The Audience

- Who is your audience?
- What brings them together?
- How knowledgeable/technical is this audience?
- What does the audience want from this presentation?
What do you want to accomplish?

- Identify your objectives - aim to be able to summarize this in a single clear sentence.

- Avoid temptation to tell everything you know on the subject.

- Identify the key points and your take-home message. Concentrate on getting these across of the audience.

- If the point is not clear, audience will ask themselves: “What is the point of this talk?”
  - Probably resulting in annoyance, boredom, or bewilderment.

Presentation Organization

Standard presentation structure:

*introduction* - *body* - *conclusion*.

“tell them what you’re going to tell them, tell them it, tell them what you’ve told them”
The Introduction

- Grab the audience’s attention!
- Know exactly what the first few sentences will be - introduce the exact topic of the presentation.
- Set the work in context - why are you doing x? what application might it have? what existing theory are you building on?
- Remember the audience - provide enough background so that they will be able to follow the talk - but don’t bore them.

The Body

- Usually takes the largest portion of the available time.
- Tells a story about the purpose of your work.
- Experimental results (positive and negative) can illustrate and support the story, but they are not the story.
- Explain what experiments you did, why you chose them, what you learned from them.
- Progression of the story must be logical, but it is often effective to discuss mistakes and surprising results. Explain how your thinking developed based on these results.
  - research experiments where you always know the results in advance are rather boring!
The Conclusion

- Cement the key points in the minds of the audience.
- Recall the issues raised in the introduction and point out how your work has addressed these.
- If you find yourself short of time do NOT cut from the conclusion, omit or condense material from the body of the talk.
- Do not introduce new material in the conclusion - looks disorganized and may confuse the audience.
- Complete the talk with a strong memorized sentence which captures the message of your talk. If appropriate invite questions. Then stop talking.

Planning

- Plan the structure: introduction, body, conclusion.
  - List the points to be raised in each section.
  - Assess them carefully: are they all required? is the order logical? is anything missing? (always, always think about the expected audience for this talk)
- Timing: Know how much time is available for the presentation. Find out how much time is expected to be reserved for questions. Plan to spend about 5% on the Introduction, 5% on the Conclusion, 90% on the Body. DO NOT overrun on the time available.
Planning

- Speak the presentation out loud. This tells you:
  - how long you need to speak for to get through the material in this form.
  - whether you can clearly express your ideas, understanding something isn’t enough, you need to be able to explain it in clear language to an audience unfamiliar with the idea.
- Revise, revise, revise until you are happy.

Visual Aids

- The role of the visual aid is to illustrate or emphasize.
- Good visual aids can increase the audience’s retention of what you say.
- Poor visual aids are often worse then no visual aids.
- Visual aids are not a script. Your talk should not be reading the slides!
- Too much text will mean the audience reading instead of listening. You may be reading instead of looking at them. Overall contact between audience and speaker is lost.
Visual Aids

• Keep slides simple.
• Use key points, not full sentences.
• Choose a plain sans serif font, e.g. helvetica, NOT Times Roman. (Try it out and see which looks easier to read from the back of a room!)
• Use *italics* and **bold** for emphasis, but use sparingly otherwise they lack emphasis and can become annoying.
• Consider choice of colours carefully, consider issues of contrast between text and background, how well do your preferred colours project, possible colour blindness issues for members of the audience.
• Use only *simple* tables of results, when possible use *simple* graphs instead.

Body Language and Gestures

• Body language gives an impression of your talk, try to appear enthusiastic from the start.
• Be aware of your appearance to the audience.
• Look at the audience, NOT the floor, your notes, your slides, the ceiling, the back of the room.
• Make eye contact with members of the audience.
• Try to be aware of mannerisms (shaking keys, brushing hair, etc) and reduce them - they can be distracting.
Group Presentations

Group presentations should follow all the preceding, but introduce further issues as well.

- Who should speak when?

- Try to balance the amount of time each person speaks for.

- Try to make the progression between speakers smooth. Maybe one person can run the presentation with others invited to speak at suitable points, or maybe divide the time up and speak one after the other.

- Try to ensure consistency in style of delivery. Prepare the slides together so that the appearance is consistent, and check carefully that all necessary background is introduced by somebody and that the technical level of the delivery is consistent.

Further Reading

A good book if you want to read more about preparing good scientific presentations is:

Scientists Must Speak - bringing presentations to life

D. Eric Walters and Gale Climenson Walters

Routledge, 2002.

18.45 euro