

Research Talks at LCSO

1. Introduction

Learning to present your research is very important in science. Nearly all interviews will start by a presentation of your work. There are many ways to make a good talk, and each group member will have a personal way to tell his story. As in research, training is also essential to help you become a good speaker. Nevertheless, a few general features should be present in all talks and will help you improve on your presentation skills. You will find below a few suggestions for different types of talks.

The research talks during group meetings are the prime mode to communicate your results to the group or myself and each group member will present their results about once every 4-6 weeks. These monthly presentations will give the group a better overview of your last efforts and complement my weekly interaction with you. It will allow refocusing better the research.

2. Research Talk at Group Meeting

Presenting research at group meeting will be scheduled about once every 4-6 weeks. No presentation will occur during the last three months of the thesis (writing time). The schedule will be managed via an interactive file on the google drive.

Exception: If for any reason (absence, intensive writing, sickness,...) you could not work in the lab 75% or more, please contact Stefano at least one week in advance to cancel your presentation.

2.1. Power point presentation: Research update (Presentation around 15 min + 15 min discussion)

Purpose:

The goal is to profit of the knowledge of the group to solve your problems in the lab and plan your research. Consequently, you should spend most time on what doesn't work, not what work! It is really the place to go on small technical details (column, work up, purification, setting up reactions, calibrations, quantifications,...).

You have a lot of freedom to present your research. Nevertheless, a "red line" should be clearly visible in the talk. You should have:

- A title slide telling who you are, what you speak about and what **was the time frame of your research for the last period.**
- A **very short** reminder of your research project
- A short reminder of the stand of research the last time you spoke to the group.
- A slide including the goals you formulate at the last presentation, **eventually modified after comments at group meeting**
- Your results, try always to make clear when you need suggestions. **Focus on unsolved problems.** Give enough detailed information for the people to help you, but still present in such

a way that people can follow you: the success of the meeting is measured in how much useful input you get, not how many results you present!

- Your conclusion and plan for research in the next month and the long term.

The talk could for example look like that:

- **Slide 1:** your name, main title and secondary title (for example Annulation Reactions with Amino-Substituted Rings: Extending the Scope of Cyclobutanes), and Progress report MM/YYYY-MM/YYYY (in which you indicate the last time you spoke at group meeting)
- **Slide 2:** Introduction of the project in general. Please do a short version of the introduction in max. 2 slides, do not use the one you prepared for a new project introduction.
- **Slide 3-4:** Previous work in the group and yourself on the project. You should try to keep this part no longer than 2 slides: repeating previously obtained result should be done only if necessary to understand the current research period.
- **Slide 5:** Goals of the ongoing research period (taken out of the last presentation)
- **Slide 6-13:** Results in the last research period. Speak in details on what you did, especially where you are blocked.
- **Slide 14:** Conclusion (= comparison of the results obtained with the goals) and short term working plan (for next month). Discussion with the group for suggestions.
- **Slide 15:** Long term working plan: Discussion with the group for suggestions.

2.2. Power point presentation: New project/Conclusion of project (Presentation around 20-30 min + 20 min discussion)

Purpose:

New Project: The purpose is the same as for an ongoing project. However, to allow the group to give you help, you need to introduce your subject more extensively.

Conclusion of project: You need to give a complete overview to get useful input on how to sell your project for publication, and if it is really finished (are experiments missing before you submit a publication?). Are there interesting follow-up projects or is it better to fully close the project?

In both cases, your presentation will be different. It will be important for you to present more extensively the backgrounds of the project.

The talk for a new project could for example look like that (although the exact structure will depend a lot on the project):

- **Slide 1:** your name, main title
- **Slide 2-4:** Introduction of the project in general. Broad importance of the field.
- **Slide 5-11:** Previous work in the field.
- **Slide 12-14:** Work of the group in the field (If applicable).
- **Slide 15:** Conclusion on the state of the art in the field.
- **Slide 16:** Goal of the project. Which are the main limitations in the state of the art you want to address and why?
- **Slide 17-21:** Preliminary results (if available).

- **Slide 22-25:** Working plan on the short term (next month) and longer term (next year). Define milestones and deadlines to be reached to decide if the project continues or dies. Discussion with the group.
- **Slide 26:** Conclusion

For a talk on conclusion of a project, Slide 16-30 will be a full description of your results.

2.3. Actions after research presentations

- 1) Update your goal slides with the group suggestions
- 2) **Add the presentation on the shared file**
- 3) Come to my office if some points are not clear and you want to further discuss with me.

3. Training presentation at group meeting

Purpose:

Present the most interesting of your results to an audience outside the group.

Presentation for conferences, exam (first year) or thesis will start like the presentation of a new project, and continue with the presentation of the results.

Major difference with the research talks at group meeting:

Content: You select the most interesting scientific results of your research, and speak mostly on what worked! It is consequently fundamentally different from the research presentation for the group. A typical example is starting material synthesis for methodology project: it could be a major part of the discussion if it blocks your project at group meeting, but you will probably not mention it at all for an outside presentation...

Form: You need to take much more care for the details: each slide will be a piece of art, with well equilibrated illustrations and text. All not relevant information needs to be removed (typical cases to be removed: compound numbering, notes on tables/schemes, reaction condition details not relevant to discussion). In addition to discuss science, the group members will also help the speaker to improve his story and slide quality. Finally, an acknowledgement slide will be added at the end of the talk.

In general: **Illustrations designed for a written text (e.g. publication) cannot be used as such for an oral presentation**, as the situation is very different (you have time to read a lot of detailed information in a written text).

The talk could for example look like that (although the exact structure will depend a lot on the project):

- **Slide 1:** your name, main title
- **Slide 2-4:** Introduction of the project in general. Broad importance of the field.
- **Slide 5-8:** Previous work in the field.
- **Slide 9-10:** Work of the group in the field (If applicable).

- **Slide 11:** Conclusion on the state of the art in the field.
- **Slide 12:** Goal of the project. Which are the main limitations in the state of the art you want to address and why?
- **Slide 13-28:** Results
- **Slide 29:** Conclusion and outlook.
- **Slide 30:** Acknowledgements.

4. General Remarks on the form:

- **Size of slide:** To avoid problem of compatibility and surprises on old beamers, it is good to use the format: On Screen Show 4:3 (25.4/19.05 cm). The news broader format is however also OK, as it is getting increasingly used.

- **Text:** Use a simple font. The best is Arial. **Minimal size font size is 16 on the slide and 12 in the references.** Do not use full sentence, but key words.

- **Chemical structures:** organic chemists are very graphical in their thinking, so take great care to draw your chemical structures carefully. Chemists may already decide not to hire you if you have wrong bond angles or distorted molecules. Group members are required to use the template on the shared folder (a classical ACS style with thicker bonds and atoms in bold), as it is esthetically satisfying. **Size of the picture: 125% increase from chem draw, or larger.**

- **Chemical equations:** Arrows should be at least as long as conditions. Numbered conditions are normally aligned to the left, conditions without numbers are centered over the arrow. Use the options of chem draw to help you (align, group, distribute). **The amount of details you have should be in relation of the context:** Only the most important information if you do a presentation for outside, but all details (reagents, concentrations, stoichiometry, solvent, temperature, flask, inert gas,...) if you present a non-working process to the group! Again, the purpose is very different.

- **Spelling:** Take care to correct your English carefully. It will give a bad impression of you if you have spelling mistakes.

- **Try to find your homogenous style** during a presentation to help the person listening to you. Draw the structures always the same way/orientation and size, use a consistent color code, ... All these small details will make listening to you easier and more enjoyable. You can use tricks to attract the attention (colors, figures, animations...), but use them sparingly, else they will lose their effect. **Do not use fancy pre-format from power-point or backgrounds** (except eventually on the title slide).

- **Avoid overflow of information:** Slides with too much text or tables with too many entries (more than 5-6) will confuse your audience. The presentation should be "crystal clear". A good trick to avoid information overflow is to draw your drawing and text sufficiently large (see above).

- **It is also important to take care of your body language and oral expression.** Try to talk loud and not too fast and make break preferentially to "heu". Try to make regularly eye contacts with your audience and check what your hands are doing. Adapt also your clothes to the type of talk (from completely relaxed for group meeting, nicely clothed for conferences, formal for an interview).