Technical Manuscript Writing for Doctoral Candidates

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Module 15. Extracting An Oral Presentation from a Paper

It is standard procedure for dissemination of scientific information that after a paper is published, the results are also presented at scientific meetings. Typically, these talks are 15 to 20 minutes long. This time typically includes two or three minutes for question. In general, you should plan for two or three minutes for questions. Then create one slide per minute for the remainder of the time. Therefore, if your time slot is 18 minutes, and you reserve 3 minutes for questions, then you should prepare 15 slides.

This lecture model is split up into several sections. In the first section, we discuss slide content. In the second section, we discuss slide formatting. In the third section, we discuss some basics of oral presentation skills.

I. Slide Content

The purpose of an oral presentation is to communicate some specific information. Probably the audience will remember only one or two things (perhaps three) from your presentation. Think about what those three most important pieces of information are. Structure your talk to communicate those three points.

Before you prepare any slides, you should prepare an outline of the slides. The outline should contain a list of the slides. A sample outline for a talk containing 15 slides is shown below.

Sample Outline.

1. Title Slide
2. Motivation
3. Background
4. Method
5.-13. Presentation of Results
14. Conclusions
15. Acknowledgments

This outline is only a general example. If you are speaking to a specific session at a professional meeting, it is likely that everyone in attendance is well-aware of the motivation and background and one slide on each is all that is required. In the case of a broader audience, it is always better to make sure that the introduction (motivation/background) is more developed. The audience has to understand what you are doing and why you are doing it. Excellent results don't mean anything if the audience doesn't understand what you are doing.

In developing the outline, remember that each slide must have a purpose. Each slide must communicate some particular piece of information to the audience. Each slide must also contribute to an orderly, logical flow of information.

Don't put anything in the presentation that is proprietary or which you are not ready to share with the world. Nowadays people stand up and take snapshots with digital cameras during your presentation.

Don't put anything in the presentation that you are unsure about. <u>If you don't understand it, don't put it in the presentation.</u>

Don't put anything in the presentation that is not true. In this presentation you should hold yourself to the same ethical standards that you do for the written manuscript.

Example:
As an example, let us consider a presentation of the manuscript,

Wang, Q., Keffer, D.J., Nicholson, D.M., Thomas, J.B., "Coarse-grained Molecular Dynamics Simulation of Polyethylene Terephthalate (PET)", *Macromolecules*, **in press**, 2010.

The results of this work were presented at the annual meeting of the American Institute of Chemical Engineers in 2010.

Wang, Q., Keffer, D.J., Nicholson, D.M., Thomas, J.B., "Coarse-grained Molecular Dynamics simulation of PET", AIChE Annual Meeting, Salt Lake City, UT, November, 2010.

The purpose of this talk was to communicate the following three ideas.

1. We have developed a coarse-grained model of PET using the $OZPY^{-1}$ procedure.
2. The coarse-grained model is capable of reproducing the structural and dynamic properties of more accurate and expensive models.
3. The coarse-grained model generates dynamic and entanglement data that corresponds well to the predictions of the Rouse model and Reptation theory for short and long chains respectively.

This talk had 18 slides. The outline for this presentation is as follows

1. Title Slide
2. Motivation: Molecular vs. Coarse Grained Simulations
3. Background: Coarse-Grained model
4. Method: Coarse-grained Potentials
5. Results: Coarse-grained Distributions obtained from atomistic simulations
6. Method: inverse OZPY method
7. Results: Coarse-grained Potentials
8. Results: Comparison of bonded distributions from CGMD and atomistic simulations
9. Results: Comparison of non-bonded distributions from CGMD and atomistic simulations

II. Slide Formatting

People have different opinions about slide formatting. Some people like to include a lot of text, while others do not. There is no single correct way to format a slide. However, the formatting of the slide must contribute to one goal: <u>the information on the slide must be clearly communicated to the audience.</u>

Here are a few simple tips.

● Use a common slide background that contains your institution's name.

● Put a descriptive title on each slide.

● Use one font: Arial. (Every single letter in the presentation should be in arial.) It is a san-serif font that is easy to read.

● The largest font size should be 24 point for titles. The smallest font size should be 14 point. Don't use anything smaller than 14 point font. It can't be read.

● Plots should in general follow the formatting rules given for the manuscript.

● Use of color in plots should be encouraged for oral presentations. (It is discouraged for manuscripts.)

● Use thick lines and big markers with legends in at least 14 point arial so even the old professor in the last row can make sense of the data in the plot.

● At the bottom of each slide presenting data, print a single sentence or phrase summarizing the point that the audience is supposed to take from that slide. Don't rely exclusively on your words to convey the meaning. Use redundant communication—both written and verbal. You minimize the opportunity for misunderstanding with this redundant message.

III. Oral Presentation Skills

III.A. Preparation Before the Presentation

● Rehearse the talk so that the timing is correct. It is always very easy to identify speakers who have not rehearsed their talk. They typically either rush through their slides and end too early or they stumble through the slides and are unable to finish their talk in the allotted time. Multiple rehearsals, either to your own research group, or in front of the mirror are required to get the timing right. Rehearsals also allow you to get the language that you wish to use right. You identify the phrases that you will use, especially those needed to communicate complicated ideas.

● Develop an introductory phrase that you can deliver smoothly. People enter and leave sessions all the time. So, at the beginning, you still have audience members from the previous talk. They are trying to decide whether to move on or stay for your talk. They have only a minute to decide. A smooth introduction may induce them to stay. An uncertain, awkward or unintelligible opening will convince them to leave before your talk has really started. So practice your opening line. Probably the session chair will begin your talk with an introduction along the lines of, "Our next contribution comes from Yonsei University. It is titled, 'Blah blah blah'. The speaker is Ms. Blah blah Kim." Therefore, you do not want to start your talk by repeating the title. The session chair has just told everyone the title. Instead, think of some phrase to get you started. Here is an example of an introductory statement, "I would like to thank the session chair for organizing this excellent session and allowing me the opportunity to present some of the recent research on polymer synthesis that I have been working on at Yonsei."

● Develop phrases (segues) to connect slides. This reinforces the logical organization of your presentation and makes it easier for the audience to digest. For example as you move from one slide to the next you can say something like, "On this slide, we have shown that as the molecular weight increases, the electrical conductivity increases. Typically, this is accompanied by a decrease in transparency." (Move to the next slide.) "Here we see contrary to expectations, there is no negative impact on transparency as the molecular weight is increased." Simple joining phrases like these can make a presentation seem like a coherent talk, rather than an unconnected collection of plots.

● If you want a laser pointer, bring your own.

● If you are required to copy your presentation onto a common laptop connected to the projector, then arrive early (before the sessions starts) and get your presentation on the computer. Don't wait until it is time for your talk to begin to try to get your talk onto the computer.

● If you have to use your own computer, make sure it works by coming early to the sessions and hooking your computer up to the projector. Many speakers do this. If you use a Mac, make sure you do it. I don't know how many times I have sat for ten minutes while the speaker tries to get the resolution on his Mac to be compatible with the resolution on the computer projector. Get their early and get the technical kinks worked out without wasting the time of everyone in the audience.

● Wear a watch so that you can pace yourself. You should know which slide marks halfway in your rehearsal. If by the time you get to that slide, you are well ahead or well behind your schedule, then you can adjust your pacing accordingly.

III.B. Presentation Speaking Tips

● Speak loudly and clearly. If you are soft-spoken, use the microphone if it is available. Regardless, speak loudly. It defeats the purpose of an oral presentation if no one can understand you.

● If you have a strong accent, speak slowly. Your goal is to be understood. If you have a very strong accent, you may choose to employ slides with more text on them so that members of the audience who don't catch every word you say can still follow the talk by reading the slides.

● Don't read the slides. Everyone in the audience knows how to read.

● Face the audience. Your body should be facing the audience. Don't stand with your back to the audience looking at your slide, while you talk about it. If the computer is to the right of the screen, then hold the laser pointer in your left hand. If the computer is to the left of the screen, then hold the laser pointer in your right hand. This way your body remains open to the audience, even while your arm is lifted and pointed to the screen. Otherwise, you will be talking either to the screen or into your shoulder.

● Your mouth should be facing the audience. This directs your voice toward those who need to hear it.

● Your eyes should be facing the audience. Eye contact is a way of keeping the audience engaged.

III.C. Answering Questions

● Anticipate questions. Prepare answers ahead of time to those questions. Prepare extra slides, located in the same file after your acknowledgments slide that you can go to if you need to, during the question and answer session. Think of the people that will likely be at the talk. Think of their objections. Prepare responses to those objections.

● Be polite. Remain civil even if the audience member is not civil.

● Answer honestly.

● Answer in complete sentences.

● When you don't know the answer, admit it. "I don't know the answer to that question," or "I would have to go back and check my notes to answer that question," are perfectly acceptable answers. Do not pretend you know the answer. <u>Do not make an answer up.</u>

● Sometimes someone in the audience says, "This work has already been done. See my work in Journal XYZ." Nine times out of ten, this person just wants to bring attention to themselves and their work in a public forum. They don't care if it is at your expense. If you are not aware of this work, the correct response is, "I was not aware of this work. Thank you for bringing it to my attention. I will make sure to find it when I return from this conference." Do not try to answer something you know nothing about. Do not tell the guy that he is a jack-ass for using your question time to promote his own work. Everyone in the audience can recognize a jack-ass on their own, without you pointing it out for them.

● Sometimes someone in the audience says, "Did you try investigating this system when you replaced the polymer with a ceramic and raised the temperature 1000 degrees and hold it upside down while you are standing on the moon?" In short, the audience member asks for some complicated variation of what you have presented, knowing full well you haven't done anything of the sort. Frequently, people who ask this question love the sound of their own voice and their question becomes so long and rambling that neither you nor anyone else in the audience has any idea what the question was by the time the questioner finally comes to an end. Do not ask this person to repeat their question! That will waste all of your question time on this one day-dreamer. In this case, the correct response is, "Thank you for that excellent suggestion. It isn't something we have done yet, but I will look into it when I return from this conference." Don't promise anything but don't ridicule the suggestion either. Be polite and move onto the next question.