Presentation Hints

Physics 460

Winter 2015

Introduction

An important goal of any advanced physics course is to learn to communicate effectively and confidently in both oral and written forms.

An oral report should be suffused with the utmost professionalism. Just as in a written report, careful attention must be paid to such issues as style, organization, clarity, accuracy, completeness, and citations. A presentation laden with misspellings and/or mispronunciations, incorrect equations or wrong definitions, and poorly organized data tables and illegible graphics will not only be ineffective at conveying your message, but it will leave a lasting and highly uncomplimentary impression on your audience. The remainder of this note will address ways to avoid such pitfalls in your own presentations.

Some Tips for Successful Presentations

The major components that make up an oral presentation are not unlike those that comprise a written report. To wit:

- A **title page**, giving the title, authors, authors' affiliations, and a brief, but informative abstract.
- For an oral talk, it is very helpful to include an **outline** of the presentation, basically to "tell'em what you're going to tell'em".
- In the **introduction**, the background, motivation, and significance of the work should be discussed. (Here, you begin to "tell'em" your story.)
- If appropriate, a section developing the **theory** behind the experiment or investigation should appear, in which relevant equations and relationships are introduced or derived.
- Following this, the **data** or **observations** should be discussed, including the details of the techniques and/or instrumentation used to acquire the measurements.
- In the **analysis** segment of the presentation, the application of the theory to the data/observations should be described. It is here that issues pertaining to error analysis and propagation, if appropriate, must be addressed.
- In the penultimate section of the body of the presentation, the **results** of the investigation should be clearly stated, and a **discussion** of their significance and their relationship to theory or other relevant experiments should be given.
- Finally, a **summary** or set of **concluding remarks** must be provided in which you "tell'em what you've told'em".
- At the close of the presentation, it is appropriate to include **citations** or **acknowledgements** to relevant literature and/or individuals that have contributed significantly to the progress of study.

Clearly, not every presentation will adhere rigorously to this pattern of organization. Sometimes one or more of these categories can be effectively combined together without loss of clarity and/or in the interest of conciseness. Nevertheless, in some manner, each element identified above must be included in presentation.

As you begin to prepare your presentation, it is useful to ask yourself some of the following questions:

1. To whom will the presentation be given? Is the audience comprised of specialists in the field, generally knowledgeable scientists, or the general public? The balance between introductory material and more highly specialized content may depend critically on who will hear/see your presentation, and you must adjust the amount and level of coverage of your topic(s) accordingly.
2. What is(are) the most significant point(s) you wish to convey to the audience? Bear in mind that you only have a few minutes in which to engage the attention of the listener/reader, and you must not waste these precious moments on items of lesser importance. Focus on the major issues related to your research, and leave the minor ones for the question/discussion period.
3. What is the physical layout of the space in which the presentation is to be given? The environment can have a significant impact on the success (or lack thereof) of your talk/poster. Check out the meeting room as early as possible beforehand, and be prepared to adapt your presentation to the existing circumstances of its delivery/display. Some examples of environmental effects pertaining to each type of presentation will be touched on below.
4. What type(s) of visuals will be used to support the presentation? What type(s) of equipment must be available to permit their use? Who is responsible for providing the required equipment? Do you know how to set-up and use the equipment properly? We have all suffered through presentations whose effectiveness have been compromised (sometimes fatally so) by ineptness or inattention in the use or application of technology. Be sure that you are proficient in the use of whatever A/V equipment you select to support your presentation, and when in doubt, error on the side of simple, tried-and-true methodologies.

As much in advance of your presentation as possible, you should begin to outline your talk/poster and to develop your strategies for implementing it. Early consultation with your colleagues and/or instructor may be helpful in getting started in the right direction. In connection with Question 4. above, if your visuals require mastery of some unfamiliar “tools” like graphing software (Origin, Cricket Graph, etc.), graphic design and image editing software (Paint Brush, Photoshop, etc.), analysis software and equation editors (Mathematica, MathCad, etc.), or even common word processing and presentation software (MSWord, Corel WordPerfect, Microsoft PowerPoint, etc.), you should begin practicing with them as soon as possible. And, if you get stuck on some element or process in connection with any of these packages, ask for help! There is likely to be enough resident expertise among your colleagues and instructors to assist you in overcoming your difficulties, provided you don’t wait too long before seeking advice.

Oral Presentation Basics: In an oral talk, the principal issue is time management. Most oral presentations at professional meetings (except for special invited discourses) are limited to between 10 and 15 minutes with perhaps as much as an additional 5 minutes for questions and discussion. So, you must deliver your message quickly, clearly and concisely. Here are some hints to help you achieve success in this mode of communication.

Do speak clearly and forcefully using a moderate rate of delivery, neither too fast nor too slow. If you have any doubts about whether the audience can hear you, ask them for feedback and adjust your speaking volume and tone as needed. If the hall is large and some form of electronic amplification is required to project your voice effectively, take a few seconds at the start of the talk to make sure the microphone is working properly and that its placement and volume are set appropriately. Keep in mind that as you turn your head, the pick-up distance between your mouth and the microphone changes; this inevitably alters the quality of the sound reaching the audience. Try to avoid too much head movement while speaking either from a podium or with a portable clip-on microphone.

Do bring a small extendable or laser pointer with you. Sometimes meeting organizers make these devices available and sometimes not. It is always better to be prepared and to provide your own. Pointers make it convenient and easy to highlight important elements of slides and transparencies without leaving the podium or projector and moving to the screen. This saves time and motion when giving your talk.

Do keep your visuals simple and uncluttered. Use an outline and/or "bullet" format for delivering your points, and make sure that your slides and transparencies are visible from the back of the room. Type fonts should be san serif, large and **bold**, and the text should be well-spaced. The age of hand-written transparencies (except perhaps for the most informal of presentations with a group of intimate colleagues) is past! As with poster displays, the use of color to highlight important issues and concepts is welcome.

Don't read your slides or transparencies to the audience; let them to that. You should know your material sufficiently well that you should not have to remind yourself of what you're going to say by reciting what is on the visuals. Instead, discuss the material presented on the slides and transparencies, embellishing the details of each point and providing the connective verbiage that will smoothly link each topic or concept to the next.

Don't display items copied/scanned directly from books or journals without securing the proper permissions from the publishers. Besides the possible litigation over copyright issues that this practice invites, it should be avoided because the reproduced material (unless suitably enlarged which often degrades its quality) will generally too small to be seen effectively beyond the first few rows of audience seats.

Don't stand in front of the screen and don't talk into the screen. Stand to one side of the screen (or, better, remain at the podium or projector) so as not to block the view of the audience and use your pointer. Face the audience throughout the talk as much as possible, and try to make eye contact with the assembly in all directions during the presentation. These steps will not only help in terms of voice projection, but in terms of audience inclusiveness - each hearer will feel like you are talking to them personally.

Don't distribute papers or other materials to the audience during the talk. If information must be passed out, do it at the beginning or the end of the talk, and enlist the aid of other colleagues so

that you do not have to be directly involved in the process. This will help conserve the time you have available to present your work.

Don't try to bluff your way through a question you can't answer. Be honest. There is usually nothing wrong or harmful about admitting that you don't know something. In such circumstances, turn the question around and invite the speaker to elaborate on the issue; chances are the person asked the question in the first place because they already knew the answer. Let them show off their expertise. It won't detract much from your presentation in most cases, and it will build good rapport with the speaker and much of the audience. For the most part, you'll find that you really do know more about the topic than the majority of the people in the audience. Keep in mind that most folks ask questions because they're genuinely interested in knowing more about your work and not because they want to put you on the spot or to embarrass you.

Do practice, practice, practice your talk beforehand, particularly to get the timing down precisely. If you can persuade several colleagues to listen to and constructively critique your talk beforehand, so much the better. Just as in a play, the more you rehearse, the better and more confidently you'll recite your lines.