

## Advice on the Presentation of Scientific Seminars

**I. Organization** - Most scientists can give good talks; following a few basic guidelines can help a lot.

- A. Be definite as to your objective in the seminar. Consider what you want to accomplish and how to achieve that goal, e.g. educate students, be offered a faculty position, report research results with clarity, or solicit input from colleagues.
- B. Have one main thought or idea to put across or one question, whose answer is the main purpose of your work.
- C. Make everything else secondary but related to that main theme.
- D. Try to empathize with your audience. Consider their level of familiarity with the subject, their possible interest in it, and how that may relate to your goal in giving the presentation.
- E. Many speakers find it helpful to sit quietly for five or ten minutes before a presentation to focus on the organization of a presentation. It can be helpful to use that time for review of the order of the topics, the main transition sentences that will be used to bridge changes in the topic, and the conclusions that will be presented at the different stages during the talk and summarized again at the end.

## **II. The Presentation**

- A. First state the **topic of the presentation**, not necessarily the conclusion, but the main idea.
- B. State next **why you are interested** in your subject; that is, place it clearly in the context of its relation to other knowledge or applications. A problem is not worth pursuing just because it was assigned to you or because it happened to be new, but because its solution will fit an intellectual or practical need. Tell the audience the need that your presentation relates to.

- C. State **why the audience should be interested**. This can be the place to inject some of the major conclusions. The upcoming background material will be more meaningful to listeners if they know what it is leading to. It is not a good idea to save all the punch until the end. It can help to have a preview of the major outcome right at the beginning.
- D. As a part of the introduction, many good speakers provide a brief description of **the type of materials** that will be presented, **the order** that they will be covered, and **the rationale for that order**.
- E. Go through the subject in an orderly way and **stick to the main line of thought**. Keep referring back to the main theme whenever it seems obscured by accidental observations. **Avoid digressions**. Go through your material slowly enough so that you'll have time to think about how the presentation is being received. Inexperienced speakers often progress through talks faster than a general audience may be able to take in material and ideas. Try to make each sentence lead straight to the next.

### *III. Delivery*

- A. **Plan illustrative material** for effective use. If you show slides of graphs, diagrams, tables, or equations or if you put them on the board in advance, make sure you **allow enough time for the data to be read and assimilated**. This is essential for effective teaching. When you draw during a lecture, have a paper copy of your sketches ready in advance. Write legibly, **label the coordinate axes, and place a scale on each**. Keep them simple. When using computer-generated slides and images try to be sure that the color choices allow enough contrast for comfortable viewing in a partially lit room. It is a good idea to assemble and test the exact equipment well before the scheduled presentation. If you are going to use a computer or computer-generated slides, it's good to preview all the images at least several days in advance of your presentation (We may see why as the course progresses.) A descriptive title at the top of a graph or table on a slide is often helpful to the audience.
- B. **Don't talk to yourself**, (or to the projection screen). Be aware of the reactions of the audience (for example, by noting whether the people in the back of the room appear to be straining to hear you). If the audience is large, watch the reactions of a few people who appear to be listening sympathetically and who do not know the story in advance. When you feel you have been obscure, try to clarify your point with further explanation before proceeding. In research seminars, don't ask: "Are there any questions at this point?" Rather, give chances for interruptions by remembering to include brief pauses and by keeping an eye out for raised hands.
- C. **It's best not to use "private jargon"** that is, jokes or references to laboratory

practices or abbreviations that are not likely to be familiar to the audience; but if you do, then explain what they mean.

- D. **Do not interrupt people who ask questions**, or answer them superciliously. Inexperienced speakers should be particularly careful about this point. Listen to questions carefully and ask the questioner for clarification if needed. If you do not know the answer, say that or be open about saying you could try to figure it out. Do not guess (unless you candidly admit that you are guessing).
- E. **Be aware of the pace of your speech**, especially when teaching. Observe audience reactions, or ask for feedback if you suspect that you may be speaking too quickly or too slowly. It is best to find the appropriate speaking pace for your audience and stick to that pace independent of the amount of time you may have remaining. Unless you are a slow speaker do not try to compensate for poor timing by speeding up the pace of your speech.
- F. **Plan your timing.** Have a tentative timetable with your notes. If you find that you are behind schedule, skip some of the minor details (chosen in advance), possibly without announcing that you are doing so. If you are ahead of schedule, (and that is likely to be the case if you are not experienced at giving scientific talks) that is usually fine. It is often easy to expand a talk, by covering some of the areas in more detail.
- F. **Never read a talk.** Avoid following an elaborate outline too strictly; there is the possibility for a loss of continuity when you start a new paragraph or begin to cover a new topic. **Introduce each new item with reference to the main theme and reference to what preceded it.** It is often helpful to have notes that contain the important transition sentences that will be used to bridge changes in topic during the lecture. Text slides that contain the important conclusions or the questions that bridge major transitions in a talk can be very effective.
- H. A convenient set of notes can consist of:
- 1) A skeleton outline on one card with the sequence of topics and the timetable.
  - 2) The speaking outline, with abbreviated reminders for each specific item. (The extent of the speaking outline is a matter of personal choice: about one double-spaced typewritten page for 15 minutes is often satisfactory.) Use underlining, numbering of items, and other marks in bright colors to remind you of specific data or remarks. It is helpful to have the transition sentences that link two subtopics written out in advance. List the tables, figures, etc. that you want to use, and mark those that you plan to leave on the blackboard for later use. Many speakers like to have a separate written list of the conclusions they'll present.

- 3) Sketches of drawings and material for tables.
  - 4) You might want to keep 1, 2, and 3 in an open folder, separate from anything else that you may wish to take along for reference.
  - 5) You may find that you don't need to refer to your speaking outline during the delivery of your talk. For some speakers those materials are most useful to aid in the preparation for delivery, when planning the talk well in advance of delivery and again when making a final review just before speaking. Even if you are an experienced speaker you might want to refer to the list of conclusions when you are finishing up and perhaps feeling a bit fatigued (and relieved) at the end of the talk.
- I. **Prepare your conclusions carefully.** Make sure they are not just a summary of the observed facts. Restate the original questions, presenting the answers and the new questions derived from your work. End in such a way that people can sense that you are finishing, so they can prepare to ask questions. Usually you do not need to ask for questions at the end of a research seminar. That is typically the job of your host.

#### ***IV. Technique***

- A. Use legible type in slides. **Check your slides** while there is still time to make changes. Make sure that they will be effective even if the room is not totally dark.
- B. **Consider the audience members who may get sidetracked** by thoughts (probably stimulated by your brilliant exposition) or by daydreams. They may stop paying attention momentarily and then need to catch up as they listen again. It will be helpful to them if you give particularly important points the emphasis that will attract audience attention. It can also help those listeners if you make it clear when you are about to change topics and give a brief summary of the preceding part of the presentation. The use of text slides, and the inclusion of descriptive titles on slides presenting graphs, tables, and diagrams can also be helpful to the intermittent listener.
- C. Use humor with care, or leave it out. Cartoons are safer than stories for many speakers.
- D. Composite slides can be very useful when you have a lot to cover in a short amount of time. Pictorial representations of research protocols can save a lot of time and provide uninitiated audiences with a good feel for what methods led to the results and conclusions.
- D. **Avoid overstatement.** Try never to come off as "cocky," shifty, or supercilious (members of the audience may remember those impressions for a long time even

when you may have progressed beyond that).

- F. Slide projector problems will occur, so it is a good idea to learn how to release a stuck carousel from a projector (they have a release mechanism that allows you to do that with a coin or with your fingertip) and learn how to change a blown projector bulb. Check out the audiovisual apparatus before the audience arrives. Have some water handy to humidify an autonomically challenged larynx.

## *V. Nerves*

Most people feel nervous for the first minute or two of their first talks. Audiences seldom detect the signs of nervousness that a speaker may feel intensely. Your voice may not sound high or shaky to the audience, even though you may think that those characteristics are very obvious. The audience is most interested in the meaning of the words that you are saying or the data that you are showing. After the first couple of minutes most of us get in stride so that vague nervousness is not a significant problem. Practice helps to quiet nervousness about giving talks. You may have to give a few talks where you feel very nervous before you become accustomed to the task. This seminar series is designed to let you get through some practice talks among people who are your friends. All the members of the faculty and many of your student colleagues have been there ourselves and survived the experience.

One method for quieting pre-talk jitters is to sit alone and concentrate on the plan for your presentation. You can do this by looking over your lecture notes. It never hurts to review the order of the main points that you will cover, the specific transition sentences and points of emphasis that you would like to be sure to remember, the relation of the subtopics to the theme of the talk and the conclusions. You could look over the list of persons who you want to acknowledge and remind yourself of the points in the lecture where you can mention them. (By the way, I recommend against making acknowledgements at the beginning of a talk, when the audience is waiting for you to tell them something about the topic. It is best to acknowledge coworkers when you are talking about the actual elements of work that they contributed to, unless there is “a cast of thousands.” Of course you can give acknowledgements at the end too). With practice you may find that you can keep your mental focus on the preparation for delivering a clear and effective presentation through this review process, just prior to speaking. That can improve the talk and at the same time it can really help to quiet nervousness.

## ***VI. Feedback***

- A. Score your own performance on organization, presentation, and delivery. List what went well and what did not go as well as you would have liked. Separately, consider what you might do differently if you were to give the same talk to another audience a week later. Write those changes down and act upon them without delay, so that you'll be able to achieve improvements.
- B. Before your talk ask a friend to score you and to be prepared to help with constructive suggestions that you can ask for a few days after your talk.
- C. Do the same for your friend.
- D. It can be informative (and humiliating) to listen to a recording of your presentation. Ya know, this is, um, particularly useful for those of us who, uh, have the tendency to insert useless words out of habit, without being aware of that, OK.

## ***Kinds of Presentations***

**The 45-minute lecture** should consist of an introduction, the body of the talk, and conclusions. Of course this is the basic talk for most seminars and the "job talk" for faculty candidates. (In academic hiring, after your curriculum vitae, your written statements, and the letters of reference have resulted in an invitation for a job interview, then you and all the other candidates who are invited for interviews are on nearly even ground. The job talk you give can be decisive.)

**The 10-minute slide presentation** should consist of a brief introduction, the body, and a brief conclusion.

**The expandable presentation** should consist of a brief introduction, the body, periodic conclusions, more body, more conclusions, more body, etc. Note that all the types of presentations above begin with some form of introduction and end with a statement of your conclusions.

**The question and answer session** can be the basis for very effective teaching. This seminar series will not address teaching directly but there are two instructional techniques that are relevant to question and answer session usage in teaching that should be mentioned.

**Use of menus:** If a blackboard is available it is often very helpful to take time to solicit a range of questions, so as to assess the level of interest and the specific issues that the audience may identify by consensus. You can sometimes avoid confusion about the nature of specific questions and also keep the discussion from wandering off or bogging down on a single issue if you make a "menu" listing carefully worded questions on the board. Then poll the audience for interest in each. Start with the answer to the question that the audience members express the greatest interest in, and make use of any opportunity to answer two related questions in your explanation.

**The shy student:** In teaching, one sometimes encounters groups of students who are assigned to participate in question and answer sessions, but who never seem to ask a question or participate in the discussions that those sessions are suppose to encourage. Assigning each student the task of bringing in three written questions to each session usually can overcome that problem even with students who may be very shy.

The University of Virginia's Teaching Resource Center can provide many kinds of help and guidance in this area, e.g. brochures, training sessions, and specific advice.