

A Guide to Attending and Presenting at Conferences: A Student's Perspective

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Overview:

Conferences are key areas for exchanging information and are necessary for success in the academic world. They are potentially challenging and stressful experiences to those unfamiliar with this environment, especially undergraduate students. This document is a guide to students who plan on presenting at and/or attending conferences, especially scientific conferences. It includes advice on presenting oral and poster presentations, answering questions, and meeting people at conferences, as well as a compilation of advice from other sources. Students new to conferences will find the information in this guide particularly useful, as it provides advice from the perspective of a student, a point of view that may otherwise be unavailable.

Introduction:

Why conferences?

The process of discovery (scientific or otherwise) is self-correcting. Theories and mechanisms are proposed and refuted constantly in an ongoing global conversation within the academic community to find the answers to the questions of our fields. This exchange of information and knowledge is a crucial part of working in the academic world. Communication between groups and individuals helps academics learn from the successes and mistakes of their peers and allows for criticism, expansion and refinement of experiments or studies. Furthermore, this exchange prevents unnecessary repetition and allows academics to see which questions have been answered or have gone unanswered or unexplored.

Knowledge is often transferred through journals or other published works. This medium is effective for communicating important discoveries to a great number of professionals, but is a relatively slow conversation. The process of publishing itself and then gathering criticism and additional ideas can take weeks to years. Oral and poster presentations at conferences speed up this process, allowing academics to present on current and or ongoing research or ideas. The interactions academics have at conferences facilitate the exchange of ideas on research/experimentation, inspire new research or collaboration, and allow for direct criticism on

current research. Conferences are also important settings for creating employment and educational contacts with other academics who have similar interests.

Few undergraduate students have the opportunity to attend a professional conference in their undergraduate careers. Attending a academic conference can be extremely valuable, as students learn the ins and outs of the academic world, see presentations on controversial and ground breaking topics, and rub shoulders with world-class professors and professionals. Conferences, however, can be a stressful experience for a student with little guidance or no one to prepare them for it. Faculty advisors can help with many aspects of preparation, but a peer's perspective on a number of topics may be even more helpful in leading a student to success when attending and presenting at a conference.

How you doin'?

Welcome to this guide. Now that we've got the formalities covered, let's sit back and figure out what you're doing here. Are you headed to a conference? Or perhaps just thinking about that senior research presentation? Are you lost? Or maybe you've found this document under a pile of dust in the back of some filling cabinet located in the science building? Whatever the case, you're here now, so let's get to work.

I'm going to guess you're here for some advice. Perhaps you're trying to decide what kind of presentation to give. Well check this out:

FIGURE 1. General presentation pros and cons (for most conferences)

	<u>Oral Presentations</u>	<u>Poster Presentations</u>
Pros:	<ul style="list-style-type: none">- Relatively easy to produce and easy to change mistakes- Quick (usually 15 minutes max)	<ul style="list-style-type: none">- More people will get to see it- Allows for one-on-one conversations with observers
Cons:	<ul style="list-style-type: none">- Usually only a small crowd attends- Stresses of public speaking and answering questions on the spot	<ul style="list-style-type: none">- Sometimes more difficult to produce and hard to correct after printing- Presentation time can be 2+ hrs

Did that help at all? Or are you only more confused? If so, perhaps you'll get a better idea of what you want to do as you read on through the specific advice I have for you about both oral and poster presentations.

Oral Presentations

Generally, oral presentations are accompanied by slideshows or overhead projections to visually or concretely demonstrate key points, techniques, results, or conclusions. In our modern age, PowerPoint presentations are becoming more mainstream, which has unfortunately led to abuse of this "oral" presentation tool. Presenters have the tendency to read off their slides or to include so much data and text that they should just avoid speaking during the presentation. These presentations are often difficult to follow and boring beyond all belief. So, let's start off on the right foot. Oral presentations are named for their oral content and method of information delivery. Remember this if you produce an oral presentation. The PowerPoint or overheads are just aides, not crutches.

Oral presentations typically follow a linear train of thought through a topic. The easiest example is of a research project. An introduction and the background of the study should come first, along with a summary of what the study is addressing (usually objectives). Methods of the study are next, followed by results. These two sections have the most illustrations/slides in many presentations. The discussion and analysis of the results come next, followed by conclusions and additional questions/future areas of research brought to light by the study. And finally, don't forget to acknowledge all the folks who funded your study or helped you in some way. If you can include all this, you're good to go as far as content is concerned.

The important part of getting this information to your audience is making sure they can understand your overall message and all the steps you took to make that conclusion. The first step in communicating is making sure your audience can hear what you are saying. Speak slowly and loudly, especially if you're in a large room. Project your voice to the crowd and avoid looking at your slides and speaking at the same time. Do not read word for word off your slides, as it will drive your audience insane. You should only have a minimal amount of information on text slides. Practice giving your oral presentation with and without your slides, as they should only enhance your presentation and not keep it afloat. In this same vein, balance

your data and narrative on your slides and in your words. Overly technical presentations may lose your audience if they cannot remember why you are talking about R^2 values for 2 minutes. (Here is where a slide would be handy to remind the audience of what you're talking about and why.)

When you use slides to outline an idea, they should be simple and brief, not verbose and jumbled. Clearly label figures, graphs and tables with large text and do not try to squish too many figures on a slide. You can use colors to highlight key points in your work, but try not to distract your audience with too many flashing headings or animations. This is especially true for animations involving moving text or slide transitions; use them sparingly! Proofread everything twice or more and you can never go wrong with asking peers or professors to look over your work. You can never practice giving your oral presentation too much.

Those are some basic ideas and areas where some presentations I've seen have had the most trouble. More advice from other sources on oral presentations is available in the appendix.

Poster Presentations

Poster presentations are often described by professionals and professors as the most difficult presentation to produce. They require a delicate balance of presenting a whole story while not giving someone your entire thesis or dissertation on one big page. Unlike oral presentations, someone should be able to read your poster and understand what you did without you having to explain what you did. (This is not always and should not be the case with PowerPoint presentations.)

Like oral presentations, most posters follow the same general format of introduction/background and objectives, methods, results, discussion, further questions, and acknowledgements. Additionally, some presenters include abstracts at the beginning, which I personally recommend, but it is not always necessary if readers already have a copy in the conference guidebook. Including a references section is also a popular choice for poster presentations.

Posters can be made in one big sheet or assembled from many tiny sheets of paper, depending on technology available. One big sheet is easier to handle and more professional

looking, but also more difficult to change if mistakes are made. Posters can be made using any word processing program, graphics program with text boxes, or even one giant PowerPoint slide.

After balancing content depth, organization and format is the next step to making a great poster. Your poster should be easy to follow, with obvious progression from start to finish, usually from the upper left to bottom right in columns. Figures should be close to the text to which they refer and are often grouped in the center or bottom of the poster. Color is an important tool, especially when picking a background. Your text and figures should stand out, so contrasting colors are preferred. Titles should be large enough to read five meters away in order to attract readers and poster text should be large enough to read clearly at one meter.

See the appendix for more advice from others on poster presentations.

Answering Questions

Answering questions is arguably the hardest part of any presentation. People could ask you anything related to your topic. Question sessions for oral presentations are usually at the end and depending on how much time you have left, they can be 1-4 minutes in duration. These can be especially stressful as you're being grilled in front a group of people. Poster presentations are often left up for a day and then you stand by your poster for a few hours and talk with people who are interested in your topic or have questions.

Here's some general advice:

- Understand what you are presenting. Ask your advisor/professor questions if you feel lost or unsure of some theory or topic related to your field.
- Read up on everything you can get your hands on related to your topic, as you can never know too much.
- Practice answering questions from professors and peers.
- Breathe!
- Repeat questions so your whole audience knows what question your answering in oral presentations.
- Admit when you don't know the answer to a question, but offer your best guess if you can and let people know that it's a guess.

- If you're refuting someone else's work, remember that they might be in your audience and might try to embarrass you by engaging in an argument.

These are just some basics for answering questions. Once again, practice makes perfect and so does having an adequate background for your study. Good luck!

Meet and Greet

The first question you need to ask yourself is: Why do I want to meet or talk to people at the conference? You might be in search of job or research connections or perhaps you want more information about the institution for which the person works. Maybe you're genuinely curious about some facet of their research and how it might relate to what you do. Whatever it may be, explain your motivation to the person you are approaching. This can be very helpful to your conversation, so make your objectives known from the start.

Meeting people is not as easy as it might sound. Conferences are busy places and many professionals are on a strict schedule. It is also hard to approach people and engage in a conversation. The best way to approach someone is with a question about their work, whether it's specific to the study s/he is presenting at the conference or more general. Flattery will only get you so far into a conversation, so make sure you can say more than how much you appreciated her/his work.

Bits and pieces to meeting people:

- Research who is going to be at the conference ahead of time and brush up on the work of people who you might want to approach.
- Get mutual acquaintances to introduce you to a person if you can. The person you are meeting might be more interested in chatting with you if they know you're with Professor X.
- Try to figure out how excited this person is about talking to you. If you're bugging them, thank them for their time and get out of there.
- If you're looking for a job, most conferences have announcement/resume boards, so bring a resume and pin it up.

Conclusion

By now you should have a better idea of what you might be getting into and some ways to go about preparing for a conference. Conferences are a great and sometimes humbling experience for undergraduates who are considering further education and professional academic careers, so take an opportunity to go if one comes your way. The worst that could happen is you find out that the academic world is not for you. Good luck if you're presenting and I hope you have found something helpful in this guide.

Appendix: Additional advice from others (for better or worse)

On Oral Presentations:

Mortal Sins in Oral Presentations or How to Give a Talk if You Never Want to Talk Again
Thomas G. Wolcott

Preparing Effective Oral Presentations
Jeff Radel

Effective Oral Presentations
David Roylance

On Poster Presentations:

Mortal Sins in Poster Presentations or How to Give the Poster No One Remembers
Thomas G. Wolcott

Developing a Poster Presentations
Jeff Radel

General Poster Presentation Guidelines
FASEB.org

Tips on preparing a successful poster
CNS, U-Texas

Mortal Sins in Oral Presentations or How to Give a Talk if You Never Want to Talk Again

Thomas G. Wolcott

Audiences won't value information that didn't take some effort to acquire, so make them work to understand what you did and why it's important. Don't waste a lot of time outlining and organizing; assume that the audience will appreciate a talk that seems fresh and spontaneous, even if it wanders, includes irrelevant material, omits critical data or doesn't get around to the conclusions. Alternatively, write out the talk and read it verbatim. This suggests that it's an important address you prepared for some other occasion but graciously warmed over for this audience.

Don't let visual aids make the audience's job too easy. The points of your slides mustn't be too obvious. Use plenty of small, faint, preferably fuzzy text. If there's more text than you could type on a calling card, it's probably enough to be unreadable from the back of the room. Avoid any distracting distinction (fonts, colors) between headers and text, instead challenging the audience to sort out main ideas from supporting material. Try to use a different color scheme in each slide to make the audience think hard about the possible connections between them. An artistic advisor may be able to suggest combinations of text/background colors that will be invisible to color-blind viewers, or lurid enough to cause memorable physical sensations.

Talk to your slides. Turning your back on the audience and facing the screen demonstrates your devotion to science rather than to mere people, and shows that your information is so cutting-edge that even you don't really know it by heart yet.

Talk from your slides. This slide shows...This slide shows...Uh, what's the next slide?" proves that you're not allowing ideas to distract you from the data, and that your faith in those data is so complete that you need no other outline for your talk.

Assume that it's only the sheer volume of data that impresses audiences. Include at least one "I know you can't read this, but..." slide. This proves that you know far more than you have time to discuss. Feature plenty of tables in which only one or two cells are relevant. A superabundance of rows and columns will show how much work you did. A quick sequence of 8-10 ANOVA tables can be particularly effective, especially if you avoid allusions to the hypotheses they allow you to reject. Flip through lots of information-dense slides faster than they can be read and assimilated. This ensures respect by proving that you are more adept than your audience at dealing with information. Anything above one data slide/minute can convey this impression; but with more than two per minute you can leave the audience reeling.

Don't let ideas get the upper hand. Organize your talk around your data, not around the questions they address. Talk about "results of experiment one...experiment

two...experiment three...etc." Try to avoid drawing conclusions, relating your work to any other piece of science, or speculating about why it's significant. You'll be invulnerable to criticism as long as you stay away from ideas and stick exclusively to data, because who can argue with facts? Emphasize the statistics rather than the conclusions. As long as $p < 0.05$ you're bulletproof, regardless of whether you can offer any biologically reasonable explanation of what's going on.

This is a "talk," so use language as your weapon. Talk just loudly enough to be at the limits of comprehension. You want the audience on the edges of their seats, so make them strain to hear. If you must have eye contact with anyone, make sure it's only with people in the first few rows; this will help you not to address the folks in the back. For a real crowd-pleaser, try starting each sentence loud, then taper off to inaudibility as you get to the meat of it. Mumble. Always move from idea to idea, section to section, by using universal transitions like "Uh" or "You know," "so" or "and". Audiences especially appreciate the coherence and structural clarity of talks consisting of one long sentence stitched together with conjunctions. This charming attribute is greatly attenuated by prior practice, which therefore must be eschewed.

Don't admit to any doubt about the clarity and persuasiveness of your talk by leaving time for questions. What purpose would interaction with the audience serve anyway? You're the expert on this subject!

Finally, never practice ahead of time in front of a critical but friendly audience. Your confidence and self-realization might be endangered if anyone is insensitive enough to suggest better ways to get your points across. Adherence to these guidelines will ensure that the audience members who remain through your whole talk are quiet and non-disruptive, and that there will be few challenges (or other forms of discussion about your work) during the coffee breaks.

Preparing Effective Oral Presentations

Jeff Radel

Initial Planning

This is where you begin to tailor the talk to the situation, and for that reason this stage is very important for a successful presentation. Talk to your host and clarify these points before you spend much preparation time. If the environment and audience are unfamiliar to you, this is a critical stage. You may even want to do a literature search on potential audience members to identify areas of common interest or potential questions which may arise. Begin this stage early - the more lead time you allow yourself, the more time you will have to think up novel approaches to the topic and the more interesting and substantial your presentation will be.

Before you begin preparing the presentation, you'll need to determine:

The type of talk you will be expected to give

- will this be an informal chat, a seminar discussion, or a more formal presentation?
- different talks have different purposes; the intent of a conference presentation is not the same as a job talk. When in doubt, ask for guidance from your host.

The composition of the audience

- will you be speaking to a general audience or specialists?
- how many people are expected to attend?
- is this likely to be a friendly audience? An interactive audience?

The time allotted for the talk

- the longer the talk, the more freedom you will have to explore the topic
- a short talk needs to be very clear and to address the topic directly
- is question time included?

Expectations for information content

- is there a specific purpose for having you give a talk? Clarify the expectations beforehand and plan to address them during the presentation.
- will you be presenting novel concepts to this audience, or building upon their prior knowledge? Either way, make sure you cover the basics clearly, and early in the talk, to avoid losing the audience.

Preparation

Once you have a general idea of what you want to say, you'll have to decide how to say it. Unlike a conversation or a written document, a talk is a one-shot attempt to make a point. By contrast, a conversation consists of repetitions and clarification's based on questions and immediate feedback, while a written paper allows a reader to puzzle through its contents as often as necessary. It is essential that your talk be well-constructed and tidy, and that your points be presented to the audience both a logical sequence and unambiguously. This all takes a fair amount of preparation. Start early!

Here are a few pointers to get you started:

1. Start preparing far in advance by thinking through what needs to be said. Collect material which may relate to the topic from unusual sources, and sleep on these ideas. The final product will be more fully-developed and interesting.
2. Using big letters and a bold pen, write a clear statement of the problem and its importance, and then pin that statement on the wall above your desk.
3. Develop this theme into one jargon-free sentence that will catch the attention of the audience. Next, identify the issues you plan to address (brainstorm, then trim back; see the portion of this tutorial on outlining).
4. Arrange these issues in a logical sequence (which may change as you develop the talk). This process is easier if you use index cards to organize your talk, with one idea per card.
5. Computer-based presentation programs (PowerPoint, Persuasion, etc.) can be wonderful time-savers. The time invested in learning to use these programs is rewarded by the speed with which a presentation can be created, even by a moderately-skilled user. These programs are good tools for organizing your presentation (an electronic version of the index cards idea), they can be used to create visuals for the presentation (e.g., slides and transparencies), and even project those visuals during the presentation.
6. Avoid using lists (First ..., Second ...); you may confuse listing systems (First ..., Point B..., and another thing ...), or you may discover later in the talk that you've missed a point entirely, and then you'll be forced to backtrack. Both of these problems tend to distract your audience away from the points you are trying to make, and both give the appearance of poor organizational skills.
7. Retention of information by the audience is reduced as a talk proceeds, so if you do want to make a series of points, organize them from the most to the least important. That way, the audience is more likely to remember the important points later. You may even find that the less important points become irrelevant to the focus of the talk as you practice.
8. Determine transition elements which will help your audience to follow the link from one issue to the next. These should be logical, and may be presented by posing a question, or explaining your own discovery of the link's existence.
9. Use short sentences with simple constructions. The concept will be made more clear, and the sentence structure is more similar to conversational styles.
10. Run through the talk once, early. Go back and re-think the sequencing. Discard non-essential elements.
11. Don't assume the audience will be familiar with basic concepts that form the foundation of your talk. Outline these concepts briefly but clearly early in the talk to avoid confusion.
12. Attempt to identify problems or questions the audience may have and address them in the talk, before the audience has a chance to think of these things themselves.
13. Determine which elements would benefit by being presented with visual aids. Spend time working out the best way to present the material. Head on over to the accompanying tutorials for information on presenting material in an effective way using visual aids.
14. Prepare thumbnail sketches of these visual aids, then run through the talk again. Re-work the most appropriate and essential visual aids and discard the rest. Don't forget to proof-read your visuals! Do so while there is plenty of time to re-print that critical slide with the glaring typo.

15. The earlier you start on the visuals, the better they will be. On the other hand, avoid fine tuning each visual endlessly; if you find yourself diddling the details, go on to do something more productive instead.
16. When in doubt about which presentation medium to use (transparencies, slides, videos, multimedia, etc.), choose the format which is the least complex which remains consistent with both clarity and content of the presentation. Keep in mind that the more technology you use, the more things there will be which can go wrong. These technological difficulties may develop into a gruesome presentation experience, particularly if you are giving the talk in an unfamiliar setting!
17. If you do need to use multimedia technology in your presentation, call ahead to make sure the technology you require is supported in the room where you'll be talking!
18. **The most important preparation factor is to REHEARSE!** Do so in private at first. Then for a real acid test, videotape yourself and watch the results with a critical eye. It's often a painful and humbling experience, but the results will be worth it.
19. You can then try the presentation out in front of a few colleagues. Ask for feedback, then *act on that information*. Select those who know a little about your topic, and not those who know a lot. This will focus your attention on attempting to explain why you did what you did in simple terms, rather than encouraging attention to details only specialists care about.
20. If you start preparing early, you'll have plenty of time to refine the presentation based on your colleagues' feedback. This is always a useful process.
21. Don't waste your colleagues' time; if you are sincere about wanting that feedback, don't wait until the night before the presentation to ask for other people's input.
22. Remember, the shorter the talk, the more difficult it will be to cover the material clearly and completely. Be strict about including only what is essential information for the presentation, and removing all the non-essential tidbits.

Outlining

The primary purpose of a presentation is to provide information which the audience will then remember at a later date. Detailed referencing of material or extensive review of data won't be remembered - and may put the audience to sleep!

One way to maintain interest is to organize and present the material in a novel manner. Using a non-standard ordering of material will help to keep the audience interested. Similarly, organizing your material in a new way (rather than re-working an old talk) will help to keep your own interest in the topic, and will result in a talk which is more fresh and exciting.

The importance of outlining is often stressed in preparing written and oral presentations, but an outline following a linear format (headings, subheadings, etc.) may be restrictive. A list of terms and ideas can be daunting, and tends to focus attention on the final items.

Important Elements

Keeping these elements in mind as you prepare and practice the presentation will reduce the amount of re-working you'll have to do as it evolves, and will result in a more streamlined and effective end product.

1. **Rate:** The optimal rate for a scientific talk is about 100 words per minute. Any faster and the audience can't absorb the additional information. Use pauses, and repeat critical information.
2. **Opening:** The opening should catch the interest and attention of the audience immediately, while avoiding trite filler phrases (Thank you for having me . . .) and technical jargon.
3. **Transitions:** The link between successive elements of the talk should be planned carefully, smooth, and logical. You should make the relation between successive elements clear to the audience.
4. **Conclusion:** Summarize the main concepts you've discussed, and how your work relates to issues you've raised. Aim to help your audience achieve high retention of this final information. Signal that the summary is beginning ("In summary, ..."), but don't begin the summary too soon or else the audience will start to leave before you finish!
5. **Length:** *Don't run over! Ever!* Shorten your talk by removing details, concepts, and information, not by eliminating words. If it becomes absolutely essential to supply details, supplement your presentation with a handout. Make about 10% more handouts than you think you'll need. Always leave time for a few questions at the end of the talk.

Remember that there is no point in giving a presentation if the audience isn't listening. You should make a big effort to help them be interested in what you have to say. It therefore is appropriate to use techniques to retain audience interest, provided these techniques don't detract from the content or professionalism of the talk.

Practice makes perfect

You've probably heard this before, but that doesn't diminish its importance. **Practice is the single most important factor contributing to a good presentation.** No matter how rushed you might be, make time for at least a few practice runs. The effects of practice will be apparent, and a poorly presented talk reflects upon both you and your attitude towards the material and audience. Don't be fooled by people who claim to be able to throw together a talk at a moment's notice. Generally, their talks fall into two categories - talks which are disjointed and awkward, and talks which have had the rough edges removed by numerous prior presentations (i.e., dull and unexciting).

One problem is that you can waste a tremendous amount of time by practicing all the wrong parts of your talk. It is necessary to run through the talk a few times to get an idea of how the talk will flow. After that, seek some outside feedback to make sure you are on the right track. Finally, practice all parts of the talk equally. If you always start at the beginning and work until you run into problems, the beginning of the talk will be great, but the final portion of the talk will be

relatively more weak. Begin one out of every few practice runs in the middle or at the end of the talk.

Yes, that means running through the talk once or twice isn't enough, particularly if the material is new to you. If the presentation is important, treat it that way. **Practice.** My own rule of thumb is a minimum of 10 practice runs for any one presentation. This can be a big commitment of time, but consider what's riding on a successful job talk . . .

Presentation

Having spent all that time prearing the talk itself, there are still a few things you can do at the last minute which will help ensure a successful presentation. Or, if you are the nervous type, help fill time . . .

1. Before the day begins, or last thing the night before, run through your talk once more. Use a mirror or visualize standing in front of an audience as you practice. If you've brought a slide carousel with you (a good idea), check their arrangement. You probably won't have time to do this later.
2. If possible, take a tour the room you'll use for the presentation early in the day.
 - o If you need specialized equipment, make sure it is available.
 - o Check to see that your slides are oriented properly in the carousel.
 - o Make sure the focus switch works, and determine who will be controlling the slide advance. Do the slide advance, reverse, and focus features all work?
 - o It's your show, so ask for help with the equipment if you need it; it's better to ask for help then fumble around during the presentation. Determine who will be controlling equipment for you.
 - o If the room is large, or your voice small, use a microphone. Try it out before the audience arrives (blowing into the mike or counting '1-2-3' is tacky, so don't do it).
 - o Check to see that accessories are present; chalk, eraser, markers, and especially a pointer. If it is a laser pointer, does it have batteries loaded?
3. Avoid standing behind a lectern or desk during the presentation. Stand to one side of the projection screen or blackboard, and closer to the audience if possible.
4. Don't be afraid to insist on a few minutes to yourself prior to the talk; 15 to 30 minutes is standard. If you have an itinerary, check to see that you've had time allotted for preparation. If you are running behind, see if someone is willing to meet with you after the talk, then use that time to prepare. Use this time to double-check your materials, and your introductory and summary statements. Don't allow yourself to be distracted by audience members coming up to chat.
5. Don't wait until the very last minute to make that run to the bathroom, and remember to check carefully your appearance, including zippers, buttons and other closures, before you reappear.

The Moment of Truth

Gulp. So you are sitting there, about to be introduced. Now what?

1. Take several deep breaths as you are being introduced (but don't sigh!). Visualize your rehearsed opening statement; don't improvise at the last moment.
2. State your objectives at start of your talk, then restate them again at the end of the talk. In between, discuss how your material relates to these objectives.
3. Unless you intentionally have had experience as a stand-up comic, avoid making jokes. The results can be disappointing, and may suggest an unprofessional attitude.
4. Choose a natural, moderate rate of speech and use automatic gestures.
5. Monitor your behavior, and avoid habitual behaviors (pacing, fumbling change in pocket, twirling hair).
6. Laser pointers are wonderful pointing devices, but remember not to point them at the audience. They are best used by flashing the pointer on and off, so that the place you are indicating is illuminated briefly. Don't swirl the laser around and around one place on the projection screen, or sweep it from place to place across the screen. This is very distracting for the audience, and they will end up watching the pointer and not listening to what you are saying.
7. Enthusiasm for your topic is contagious, but don't overdo it - you'll alienate the audience.
8. Converse with your audience. Involve them in the process of the presentation by posing questions and making eye contact.
9. Keep an eye on your time, and don't run over your limit. **Ever.**
10. Be prepared for interruptions (late arrivals, burned out projector bulbs, fire drills, etc.).
11. If you must turn down the room lights, don't turn them off entirely. Don't leave the lights down any longer than necessary - remember to turn them back up! Of course, the snores from the sleeping audience may remind you to turn the lights back on if you've forgotten.
12. Don't apologize for any aspect of your presentation. This should be your very best effort; if you have to apologize, you haven't done your job properly.
13. Don't criticize aspects of the trip, city, facilities, etc. during your talk. This is another way to alienate your audience quickly. For instance, they may or may not have chosen to live in this horrible climate, but it isn't your place to remind them how horrible it is. Remember that you are a guest.
14. Strive to have a prepared and memorable summary. If nothing else, the take home message is what the audience will remember after you leave.
15. When you reach the summary and are about to finish, resist the temptation to add a few last impromptu words. They will be unpracticed, and will be the last thing many of your audience will hear you say. End your talk with the insightful, firm summary statement you have prepared.
16. Don't be afraid to give yourself credit for your own work, but do remember to give others credit where due. I prefer to do this early; other may prefer doing it later in the talk. If planned for later in the talk, don't forget to acknowledge these people's efforts, even if you have to skip a statement or two to remain within your time frame. The best friend of one of these contributors may be in your audience! If you include slides borrowed from other people, or slides which include other people's data or figures, always give credit to

these people right on that slide. This shows a professional attitude, and (better yet) can save you many words of explanation.

Handling Questions

Your presentation doesn't end once you've finished what you have to say. The question period often is the part of the talk which influences the audience the most. After all, you've had time to practice the rest of the talk. This is the part of the presentation where your ability to interact with the audience will be evaluated. Since you can't always predict the what you'll be asked, how can you prepare for the questioning? Here are a few guidelines:

1. Always repeat each question so the entire audience knows what you've been asked.
2. Before you answer, take a moment to reflect on the question. By not rushing to give an answer, you show a degree of respect for the questioner, and you give yourself time to be sure you are answering the question that actually was asked. If you are unsure, restate the question or ask for a clarification.
3. Above all, wait for the questioner to finish asking the question before you begin your answer! The only exception is when it becomes necessary to break in on a vague, rambling question; this is your show, and you have only a limited time to make your presentation. It is essential, however, that you break in tactfully. Say something like "So, are you asking?" This will focus the question and give you a place to begin an answer. Remember that your ability to interact with an audience also is being evaluated.
4. If a question is asked during the talk, and it will clarify an ambiguity, answer it immediately.
5. Postpone questions aimed at resolving specific problems (or arcane knowledge) until the end of the talk, or private discussion. This is particularly important if the answer will distract either you or the audience away from the flow of your presentation.
6. Avoid prolonged discussions with one person, extended answers, and especially arguments.
7. If you can't answer a question, just say so. Don't apologize. You then may:
 - o Offer to research an answer, then get back to the questioner later.
 - o Suggest resources which would help the questioner to address the question themselves.
 - o Ask for suggestions from the audience.

<http://www.mit.edu:8001/courses/3.041/presentations.html>

EFFECTIVE ORAL PRESENTATIONS

David Roylance

The effectiveness of your oral presentation skills may well be the single most important factor in your career advancement. (Consider politicians, who know next to nothing but can talk a great game and parlay this skill into some pretty impressive jobs.) This is a skill you'll develop and nurture over a lifetime, learning by listening to other speakers both good and bad, and learning from your own successes and failures as well. However, the following tips work for most people, and will help you get started.

General hints

- *Use appropriate style.* Being too zany or informal will keep you from being taken seriously (disastrous on a job interview), but being too stodgy and dry will detract from your effectiveness as well. It's probably best to err on the side of conservatism, though.
- *Rehearse!* There's no substitute for advance planning and preparation. Rehearse your presentation, **adjust the timing**, check your equipment, enlist the aid of an assistant to handle any technical glitches, and maintain your sense of humor.
- *Eliminate distractions.* Erase the blackboard of any previous material, don't play with the pointer or other materials, make movements of the pointer or light pen crisp and succinct, don't have visual material on screen that isn't relevant to the immediate point you're making, avoid nervous or adolescent speech mannerisms.
- *Speak to your audience.* Try not to turn your back to your audience. You should be familiar enough with each visual to maintain eye contact with members of the audience at all times. Speak slowly, clearly, and in a loud enough voice to be heard by the people sitting in the last row.
- *Remove the lectern or podium if practical.* Effective presenters never hide behind a lectern or podium. Don't let anything come between you and your audience.
- *Lose your script.* A script can sometimes make you sound monotonous or wooden. So, if possible, don't use one. Instead try note cards. Your visuals will help remind you of the key points you want to make and the order in which you wish to make them.
- *Remember your audience probably knows how to read, too.* **Never** read from your visuals verbatim; it makes audiences crazy.
- *Don't block your visuals.* Point to the screen, not the transparency. Don't try to point with the shadow of the pointer. Make sure the audience can see the screen. Be careful not to block the audience's view of the screen, or the light path from the projector. You'll usually want to avoid writing on the transparency during your talk.
- *Don't cover part of your visuals.* Many speakers do this, uncovering points as they work down the sheet. But it tends to offend the audience, and I recommend you avoid doing it.
- *Slow down.* Don't advance your slides too quickly or go from one overhead to the next in a hurry. Keep each image on the screen for at least 12 seconds. With more detailed images, leave the image up a little longer. If you change images too rapidly, your audience won't have time to absorb the information.
- *Be enthusiastic!* You may have given the same presentation to six different groups in four days, but for the audience, it's "opening night" and you're the star of the show. Enthusiasm is contagious.

Making Visuals (transparencies and slides)

- *Two rules of eight:* Check to make sure you can read the original artwork from a distance of eight times its width. Make sure audience members in the back of the room will be no further from the screen than eight times the width of the projected image.
- *Get creative:* Use different kinds of images and readable color combinations. Mix text, charts, and photographic images to keep your presentation interesting. Too much of the

same kind of image is tedious on the eye and boring. And make sure to fill the image frame, leaving only a narrow border around the edges.

- *Artwork*: Some people have the artistic talent to make terrific visuals by hand, and it's easier to use color that way as well. But for most of us, it's better to use the computer; software such as *Word* or *LaTeX* can make very good visuals.
- *Dumb and overdone graphics*: Most technical audiences understand numbers and are suspicious of hype, so "business-type" visuals such as exploded pie charts against gradient-color backgrounds might not be appropriate; a simple table might be better.
- *Avoid errors*: Spell-check your visuals before you make transparencies or slides. Typographical errors are *very* distracting, and can ruin the impression you're trying to create of yourself.
- *Don't use too many visuals*. Too many images will distract your audience from the content of your presentation. Use only enough visuals to illustrate your main points and try to keep to one idea per visual. Having too many visuals will also get you into real time problems (this should be obvious during rehearsals.)
- *Three questions to ask about your visuals*: Is this information important? Is this information accurate? Is this information understandable to your audience?

SICB Newsletter, Fall 97 <http://www.sicb.org/public/publications/fa97nl/sicb/poster.html>

Mortal Sins in Poster Presentations or How to Give the Poster No One Remembers

Thomas G. Wolcott

First, believe that your work is more important, and more interesting, than the stuff that'll be hanging on either side of it. Don't worry a lot about the dimensions of the poster boards, or making a mock-up before the meeting. No one will mind if you cantilever your display over the edges of theirs. Assume that substance, not presentation, is all that really counts. Don't squander a lot of time mounting your material to easily-fastened posterboard or foamboard; stuff as important as yours can just be stapled up on bare poster frames and still draw flocks of viewers.

If you must use attractive backgrounds, maintain an air of modesty by using dark colors unlike all the whites and pastels you'll see around you. This will make your text and figures much less intrusive to the viewer; indeed, to the casual observer they may quite disappear. If you use several background colors, place them in interesting patterns that are unrelated to the organization of the poster's content. This will stimulate both sides of your viewers' brains rather than just leading them through a logical progression.

All of your ideas and data are equally important; there are no minor points. Protest the unfairness of space restrictions by completely papering your posterboard with closely-spaced text, tables and, as a last resort, figures. When you're done, a poster designed to be seen by hundreds of people in a few hours will require each viewer to stand within 1m and read for at least half an hour.

Since folks can decide whether, and how thoroughly, to view your poster, maintain an air of mystery that will seduce them into deciphering what it's about. Instead of just spilling the beans in plain, descriptive language, try the following techniques. Have a really long title. Squeeze it in using a small font - certainly less than 108-point (3 cm) type - which is easily readable at 3m distance, and preferably less than 72-point (2 cm) type. Make sure the title isn't excessively informative. For example, "Observations of Interspecific Interactions During Some Seasons at a Geothermal Site" is much more scientific-sounding than "Wolves Ambush Elk Drawn to Warm Yellowstone Waters in Winter." Use a large proportion of the allotted space for the authors' names and affiliations. After all, what's important here?

Reserve the really good stuff for the dedicated viewers. Remember that in poster sessions the serious readers, who are up against the boards, occlude the view of the cruisers in the aisles. You want to feel that viewers are pressing forward to find out what your poster is about because it's yours, rather than because they already found it interesting by taking a quick look from the back row. Make sure that's the way it happens. Don't pander to casual viewers by leading them through the logical flow with big, bold "take-home points" visible over the crowd. Place a long turgid abstract, printed in small (10 or 12-point) type, near the bottom-left corner of your poster. Everyone who wants to find his way through your ideas will be drawn into close fellowship. Don't allow them to comfortably stand back from the action by using 16-18 point type.

Place the major points low. This, and printing them in exactly the same font as supporting material rather than in bold type over 1 cm high (24-36 points), will ensure that big ideas are accessible only to first-row viewers. Test your headings by trying to read them from 3m away; if it's too easy, make them smaller.

Place the details high, preferably in no particular relationship to the points they support. To punish the riff-raff who lack sufficient initiative to push their way forward, put this material into lengthy text pages, not pictures ("a picture is worth one k-word!"). Justify both margins so readers' eyes have no landmarks to move from one line to the next, and make entire paragraphs bold or all caps to heighten the effect. Use a font smaller than the 14-18 point type that would allow them to read while hanging back a row or two. If you

must sacrifice unreadable text to use a figure, make sure it too presents a challenge. All labels should be uninformative and require reference to the legend (e.g., "Group A," not "Fat Weasels"), in as small type as possible, and preferably in a color that differs only slightly from that of the background. In figure legends, devote plenty of space to "FIGURE 3", rather than merely using "3" followed by informative text. Place the legend some distance from the figure, and use lengthy descriptions to point out salient features rather than resorting to obvious things like arrows and strings.

The logical flow of the poster material should be in several horizontal rows, rather than in columns that occur in a left-to-right progression. This will require each viewer to walk back and forth across the width of the poster, right in front of it. The inevitable entanglements and collisions can substantially relieve monotony for the presenter.

If you have reached conclusions, don't just give them away in a bold, bulleted list. Embed them in a long recapitulation of your abstract, again in small type with justified margins. Place this at the lower right corner of your poster so it, like the abstract, can be a focal point for congestion.

By following these simple directions, you can be virtually assured of a few placid, undisturbed hours during the meetings. These times will occur while you are at your poster.

http://www.kumc.edu/SAH/OTEd/jradel/Poster_Presentations/PstrStart.html

Developing a Poster Presentation

Jeff Radel

This guide is intended to:

- Illustrate elements of layout and design for poster presentations
- Illustrate common errors in design and how to avoid them
- Provide a convenient reference for students and faculty

First . . .

READ THE INSTRUCTIONS supplied by the meeting organizers!

Having an idea about these details before you begin will make the whole process *much* easier.

General format

1. Determine the one essential concept you would like to get across to the audience.
2. Re-read your abstract once again - are those statements still accurate?

3. Determine the size of the poster (if you had read the instructions, you would already know this!).
4. Determine if you have all the elements you'll need for the poster: **Bits & pieces?** Poster board, glue, razor blades, Band-aids . . . **Data?** Do you have the data you will need? How much time will you need to prepare the data for presentation (tables, photographs, etc.)? **Outside agencies?** Does material need to be sent out & returned (photographic services, collaborators)?

• **A word of advice** (the first of many; pick and choose what works for you). Preparing a poster will take as much time as you let it. Allocate your time wisely.

- There are always things that go wrong, so do not wait until the last minute to do even a simple task.
- This is a public presentation; by planning carefully, striving to be clear in what you say and how you say it, and assuming a professional attitude you will avoid making it a public spectacle.
- If you have little experience making posters, it will take longer (estimate 1 week at the **very** minimum).
- Too much lead time, however, encourages endless fussing about. Do the poster to the best of your ability, then go do something else.

Use of Color

Mount poster materials on colored art, mat, or bristol board:

1. Mat board is available in a large range of colors.
2. Mat board is heavier, making it more difficult to crease the poster while traveling.
3. Mat board has a more durable surface than other art papers.
4. Mat board is, however, heavier and more difficult to attach to display boards in the poster session.

Use a colored background to unify your poster:

1. Muted colors, or shades of gray, are best for the background. Use more intense colors as borders or for emphasis, but be conservative - overuse of color is distracting.
2. Two to three related background colors (Methods, Data, Interpretation) will unify the poster.
3. If necessary for emphasis, add a single additional color by mounting the figure on thinner poster board, or outlining the figure in colored tape.

Color can enhance the hues or contrast of photographs:

1. Use a light background with darker photos; a dark background with lighter photos.
2. Use a neutral background (gray) to emphasize color in photos; a white background to reduce the impact of colored photos.

3. Most poster sessions are held in halls lit with harsh fluorescent light. If exact colors are important to the data, balance those colors for use with fluorescent lighting. Also, all colors will be intensified; bright (saturated) colors may become unpleasant to view.

Illustrations

- The success of a poster directly relates to the clarity of the illustrations and tables.
 - Self-explanatory graphics should dominate the poster.
 - A minimal amount of text materials should supplement the graphic materials.
 - Use regions of empty space between poster elements to differentiate and accentuate these elements.
 - Graphic materials should be visible easily from a minimum distance of 6 feet.
 - Restrained use of 2 - 3 colors for emphasis is valuable; overuse is not.

Poster text

Double-space all text, using left-justification; text with even left sides and jagged right sides is easiest to read.

The text should be large enough to be read easily from at least 6 feet away.

- Section headings (Introduction, Methods, etc.); use Helvetica, Boldface, 36 point
- Supporting text (Intro text, figure captions, etc.); use Helvetica, 24 point (boldface, if appropriate)
- If you must include narrative details, keep them brief. They should be no smaller than 18 point in size, and printed in plain text. Remember that posters are not publications of record, and you can always come to the session armed with handouts.

One option is to consider using a larger size (36 pt) for the Conclusion text, and a smaller size (18 pt) for Methods text.

Attempt to fit blocks of text onto a single page:

- This simplifies cutting and pasting when you assemble the poster.
- For the same reason, consider using 11 x 14 inch paper in the landscape mode when printing text blocks on laser printers.

Other options for fonts include Helvetica, Arial, Geneva, Times Roman, Palatino, Century Schoolbook, Courier, and Prestige. Note that these fonts represent a range of letter spacing and letter heights. Keep in mind that *san serif* fonts (having characters without curls or other embellishments) are easiest to read.

Finally, be consistent. Choose one font and then use it throughout the poster. Add emphasis by using boldface, underlining, or color; italics are difficult to read.

The Poster's Background

Two basic rules to keep in mind are that

1) Artistry does not substitute for content

2) The fancier the poster, the greater the time investment.

There are several common approaches.

- Some folks use pieces of mat board (or Bristol board) to make a solid background for the entire poster. They may then choose to use a complementary color as a border for important elements of the poster.
- Others use smaller pieces of board to frame only the elements of the poster, leaving spaces between the elements empty.

Either approach works; the former gives a unified appearance and is easier to hang straight, while the latter is easier to carry to and from the meeting. It is also possible, but often expensive, to have a commercial house reproduce your completed poster as a single large sheet of paper, which can then be rolled into a cylinder for transport.

The choice of a background (and complement) color is up to you. The general consensus, however, is that softer colors (pastels, greys) work best as a background - they are easiest to view for hours at a time, and offer the best contrast for text, graphic, and photographic elements.

Check with your graphic arts department, or with local suppliers, for color samples. Plan on using 2 - 3 large sheets of mat board per poster; plan on 3 sheets of board if you anticipate making a few errors. Next, measure the boards and cut them to size, then lay them out within your taped boundaries.

Measure twice, Cut once

An important rule, as any devotee of the 'This Old House' television program knows. Begin by measuring the elements of your first column - these bits are easier to replace if you make a mistake cutting them to size. Use a roller trimmer, sharp paper cutter, or straightedge and razor blade to carefully trim these pieces. Lay them out and move on to the next column.

When you have finished cutting the text elements, adjust all the parts of the poster & step back to take a good look at it. If it appears crooked, it probably is. Trust your eyes and re-trim the offending piece.

Before you trim those elements which are more difficult to replace (photographs, etc.), lay the poster out again and have someone else view it with you. **NOW is the time to look for errors in the text and correct them.** If you do make any changes in the text, save those changes!

Almost finished - just Stick to it!

- First, wash your hands to remove any dirt or oils you may have acquired so far. Then, find a secluded and well-ventilated spot in which to work.

- Lay one section of the background out on a clean and dry surface. Place the corresponding poster elements in position. Use a T-square and soft-lead pencil to **lightly** mark the positions of each corner of the poster elements.
 - Put some scrap paper down on another surface to protect it, place a one of the poster elements face-down on the scrap paper, and apply adhesive. Place it in position on the background, then move to the next poster element and repeat. Clean your fingers often, to avoid sticky fingerprints on the poster - dust will stick & the prints will darken with time. Use absolute alcohol to dissolve & clean sticky spots, but be sure to **test it in an inconspicuous spot first!** Like the adhesives, some inks and paper dyes are soluble in alcohol.
 - Keep going until you finish, changing the scrap paper often. Use a gum eraser to rub out any obvious pencil marks. Then lay out the entire poster again, stand back (about 15 feet), and look for errors and mis-aligned bits. Change any problems now, before the adhesive sets!
- Even though you may be approaching your limits by this stage, remember to *drink coffee or other beverages somewhere far away from the poster.*

Down to the Wire and Beyond

- Those who choose to live on the edge should note that:
 - Many larger meetings will have computers available for modifying posters. These facilities are, however, usually crowded.
 - There are always photo supply stores near the meeting which will sell you poster materials.
 - If you are unfamiliar with the city, ask the hotel concierge for local businesses which might be able to help. Remember to tip!
 - Many hotels will have photocopy and Fax machines for guest use, and telecommunication ports in the hotel rooms.
 - The world of portable computers and the Internet offers interesting possibilities for a graceful recovery. Leave your poster on a server and you can access it from a remote site.
 - Before you leave for the trip, make a final backup copy & leave the disk in an obvious place. That way, you can have someone who has stayed behind print portions of the poster and fax them to you.

Miscellaneous comments:

This page contains comments applying to presentations and meetings in general, rather than to the details of poster assembly.

Since a poster is essentially a visual presentation, try to find ways to show what was done - use schematic diagrams, arrows, and other strategies to direct the visual attention of the viewer, rather than explaining it all using text alone.

Design the poster to address one central question. State the question clearly in the poster, then use your discussion time with individuals to expand or expound upon issues surrounding that central theme.

Provide an explicit take-home message.

Summarize implications and conclusions briefly, and in user-friendly language.

Give credit where it is due. Have an acknowledgements section, in smaller size type (14 - 18 point), where you acknowledge contributors and funding organizations.

Do not use school mascots or logos on the poster; they add a useless visual distraction to the poster, and indicate a degree of jingoism incompatible with scientific endeavors.

<http://www.faseb.org/meetings/aps/poster.htm>

General Poster Presentation Guidelines

Posters should be readable by viewers five feet away. The message should be clear and understandable without oral explanation. The following guidelines have been prepared to help improve the effectiveness of poster communication.

1. Initial Sketch - Plan your poster early. Focus your attention on a few key points. Try various styles of data presentation to achieve clarity and simplicity. Does the use of color help? What needs to be expressed in words? Suggest headlines and text topics.
2. Rough Layout - Enlarge your best initial sketch, keeping the dimensions in proportion to the final poster (see diagram). Ideally, the rough layout should be full size. A blackboard is a convenient place to work. Print the title and headlines. Indicate text by horizontal lines. Draw rough graphs and tables. This will give you a good idea of proportions and balance. If you are working with an artist, show him or her the Poster layout. Ask associates for comments. This is still an experimental stage.
3. Final Layout - The artwork is complete. The text and tables are typed but not necessarily enlarged to full size. Now ask, is the message clear? Do the important points stand out? Is there a balance between words and illustrations? Is there spatial balance? Is the pathway through the poster clear?
4. Balance - The figures and tables should cover slightly more than 50% of the poster area. If you have only a few illustrations, make them large. Do not omit the text, but keep it brief. The poster should be understandable without oral explanation.

4. **Typography** - Avoid abbreviations, acronyms and jargon. Use a consistent type style throughout. Use large type, for example, ORATOR. An 8½" x 11" sheet of paper photostatically enlarged 50% makes the text readable from five feet.
5. **Eye Movement** - The movement (pathway) of the eye over the poster should be natural - down the columns or along the rows. Size attracts attention. Arrows, pointing hands, numbers and letters can help clarify the sequence.
6. **Simplicity** - The temptation to overload the poster should be resisted. More material may mean less communication. The poster-board surface area is 1 meter high and 2 meters wide (approximately 4' x 6'6"). Prepare a 6" high headline strip that runs the full width of the poster. Include the title, authors and affiliations on the strip in letters not less than 1" high. Post a large typed copy of your abstract in the upper left-hand corner.

<http://www.utexas.edu/cons/student/ugresposter/tips.html>

Tips on preparing a successful poster

the abstract:

An abstract is a summary of your work, set in the context of the research questions studied in your lab. It should actually present some results and interpretation, as well as your question and method. Write informative statements, and don't just talk ABOUT what you did. For example, write: "Anterograde axonal transport rates were 37 mm/day." instead of "Anterograde axonal transport rates were measured." If appropriate to your study, include the type of organism and cells in the abstract. You may write in the first person (plural since your faculty mentor is an author). Try to present specific information but not get bogged down in details. Make sure you give us some perspective for your studies--why is your project significant and/or interesting?

the poster:

- **PLANNING:** think about ways of presenting your results. Begin saving your best data printouts, photos, etc., for copying to mount on a poster. Talk with your faculty mentor and your colleagues in the lab about what you will present. Look around the research halls in Welch, ESB, RLM, and Painter for examples of posters from scientific meetings.
- **CONTENT:** The content and organization of posters will vary. Include figures and graphs whenever possible and place a brief figure caption or label with each. You need not include an abstract unless you wish, since printed abstracts will be handed out in booklets at the session. Do not have lengthy text on your poster. Include a brief title and

the names of the authors on your poster (including grad students and staff with whom you have worked closely). Keep in mind that while a few visitors will read every word of your poster, most will only glance at it (don't be offended!). Be clear, honest and succinct.

- **POSTER:** Mount your printed material on poster board and/or construction paper. During the poster session, your display will be tacked (with pushpins) onto a 4' x 5' vertical partition (propped vertically on a table). You may put your materials on a single print-out or poster board (handier) or you may hang several smaller pieces for the presentation (easier for travel). Be sure to use large, readable-at-a-distance lettering (laser-printer output) for the text and figure captions (18 pt type minimum).