Presentation Info (BME 136)

I. Content Guidelines:
- Title slide: Title of paper, list authors & their labs (i.e. info on title page of paper minus abstract), list presenters (you)
- Background
- Biological background – fundamental bio/physio processes involved, motivation for research (disease, relevant biological system, etc being studied, statistics of impact of disease, statistics of survival, whatever clearly motivates the research… ; what part of the bio/physio can be measured optically?, which ties into tech background)
- Technical background (optical technique used- explain how it works, why is it so great for studying the biological condition?)
- Paper
- Materials and methods- how do the researchers prepare/set up the experiment, how do they perform the experiment, on what subjects, do they have controls/normal subjects, etc
- Results: main results- your figures here will come from the paper
- Conclusions presented in the paper
- Critique/Analysis of paper
- Critique of the paper: what could the researchers have done better, are their conclusions valid, etc
- Evaluate the novelty of approach and integrated technology problem solving related to the article's topic
- Present a few of the top competing technologies (optical or non-optical); compare strengths/weaknesses of the technology presented in your paper to competitors (effectiveness: compare resolution, sensitivity, specificity, accuracy, etc); economic feasibility comparison; anything else you can think of)
- Your conclusions

II. Grading: Roughly 1/3 of the grade will come from each of the following:
- Your understanding of the bio and tech background, and of the paper
- Your critique/analysis, understanding of where your technology fits into the big picture (i.e. competing technologies, overall ability to solve the medical problem)
- Your presentation: clarity, conciseness,

III. Other Guidelines: 18 minutes for the talk, roughly 1 min/slide in Powerpoint
- 7 minutes for questions: Bruce will ask you questions until you can't answer to determine the limits of your knowledge of the subject and what you can figure out on the spot- don't worry, he does it in a friendly, nice way
- No fonts less than 24pt (or your audience won't be able to see your text!... except for figure references, which can be smaller)
- Roughly 6-8 lines of text per slide at MOST (fewer with figures)… any more needs to be split into 2 slides
- Reference all your figures (with paper references, books, or websites, etc)

SOME HELPFUL TIPS

Below are 2 helpful sites on giving effective scientific talks:
http://www.efcats.org/pages/presentation/oralpresentation.html
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The following is from Ten Secrets to Giving a Good Scientific Talk
(http://www.agu.org/sections/atmos/scientific_talk.html)

NOTE: I've included the hints that are most relevant to your presentations here, ignore the hint on the website that says not to include formulas- you will be expected to show and know the basic formulas involving your technology and any basic changes/applications related to your specific paper

1) Prepare your material carefully and logically. Tell a story. The story should have four parts:
(a)Introduction (b) Method (c) Results (d) Conclusion/Summary.

- The Introduction should not just be a statement of the problem - but it should indicate your motivation to solve the problem, and you must also motivate the audience to be interested in your problem. In other words, the speaker must try and convince the audience that the problem is important to them as well as the speaker.
- The Method includes your approach and the caveats. To me, the Method becomes more interesting to the listener if this section is "story like" rather than "text book like". In other words "I did this and then I did that, but that didn't work so I did something else." This Rather than, "The final result was obtained using this approach." This adds the human element to your research which is always interesting.
- The Results section is a brief summary of your main results. Try and be as clear as possible in explaining your results - include only the most salient details. Less salient details will emerge as people ask questions.
- The Conclusion/Summary section should condense your results and implications. This should be brief - a bullet or outline form is especially helpful. Be sure to connect your results with the overview statements in the Introduction. Don't have too many points - three or four is usually the maximum.

These four items are the core of a good talk. Good speakers often broaden the Introduction to set the problem within a very wide context. Good speakers may also add fifth item: Future Research.
There is a crusty old saying among good speakers that describes a presentation from the communication viewpoint: "Tell'em what you are going to tell'em. Tell'em. Then tell'em what you told'em." The point of this aphorism is people absorb very little information at first exposure - multiple exposures are the best way for ideas to sink in. Thus, it is ok to state some of your results in the introduction, and then to repeat your main points in the results/ conclusion sections.

2) Practice your talk. There is no excuse for this lack of preparation. The best way to familiarize yourself with the material and get the talk's timing right is to practice your talk. Many scientists believe that they are such good speakers, or so super-intelligent that practice is beneath them. This is an arrogant attitude. Practice never hurts and even a quick run through will produce a better talk. Even better, practice in front of a small audience.

3) Don't put in too much material. Good speakers will have one or two central points and stick to that material. How many talks have you heard where the speaker squanders their time on unessential details and then runs out of time at the end? The point of a talk is to communicate scientific results, not to show people how smart you are (in case they can't figure it out for themselves). Less is better for a talk.

Here is a good rule of thumb - each viewgraph takes about 1.5-2 minutes to show. Thus a 12-minute AGU talk should only have 6-8 viewgraphs. How many "viewgraph movies" have you seen at the AGU? How effective were those presentations? Furthermore, no one has ever complained if a talk finishes early. Finally, assume most of the audience will know very little about the subject, and will need a clear explanation of what you are doing not just details.

4) Talk to the audience not to the screen. One of the most common problems I see is that the speaker will speak to the viewgraph screen. It is hard to hear the speaker in this case and without eye contact the audience loses interest. Frankly, this is difficult to avoid, but the speaker needs to consciously look at the object on the screen, point to it, and then turn back to the audience to discuss the feature. Here is another suggestion, don't start talking right away when you put up a viewgraph. Let people look at the viewgraph for a few moments - they usually can't concentrate on the material and listen to you at the same time. Speak loudly and slowly. . I like to pick out a few people in the audience and pointedly talk to them as though I were explaining something to them.

5) Polish your graphics. Here is a list of hints for better graphics:

- Use large letters (no fonts smaller than 16 pts!!) To see how your graphics will appear to the audience, place the viewgraph on the floor - can you read it standing up? Special sore points with me are figure axis and captions - usually unreadable.
- Keep the graphic simple. Don't show graphs you won't need. If there are four graphs on the viewgraph and you only talk to one - cut the others out. Don't crowd the viewgraph, don't use different fonts or type styles - it makes your slide look like a ransom note. Make sure the graph is simple and clear. A little professional effort on graphics can really make a talk impressive. If someone in your group has some artistic talent (and you don't) ask for help or opinions.
- Use color. Color makes the graphic stand out, and it is not that expensive anymore. However avoid red in the text - red is difficult to see from a distance. Also, check your color viewgraph using the projector. Some color schemes look fine on paper, but project poorly.
- Use cartoons I think some of the best talks use little cartoons which explain the science. It is much easier for someone to follow logic if they can see a little diagram of the procedure or thought process that is being described. A Rube-Goldberg sort of cartoon is great for explaining complex ideas.

6) Be personable in taking questions. Questions after your talk can be scary. But questions are very important. If there are no questions after a talk that I give, I am disappointed. It means that I failed to stimulate the audience, or that they understood nothing of what I said. I failed to communicate. Questions tell you what part of your talk the audience did not understand. Questions may also help you focus your research or help you in the write up. So what is the best way to answer questions?

- First, repeat the question. This gives you time to think, and the rest of the audience may not have heard the question. Also if you heard the question incorrectly, it presents an opportunity for clarification.
- If you don't know the answer then say "I don't know, I will have to look into that." Don't try to invent an answer on the fly. Be honest and humble. You are only human and you can't have thought of everything.
- If the questioner disagrees with you and it looks like there will be an argument then defuse the situation. A good moderator will usually intervene for you, but if not then you will have to handle this yourself. e.g. "We clearly don't agree on this point, let's go on to other questions and you and I can talk about this later."