ORAL PRESENTATION GUIDELINES

Prepared for the DoD HPC Internship Program (HIP)

This document has been compiled to provide some helpful guidelines on effective ways to present scientific information. It is aimed at improving the quality of the presentation, and is designed primarily for HIP interns who might be delivering their first professional paper.

One of the most important goals of a scientific presentation is to present your research in a way that stands out. Oral presentations are challenging to design and execute effectively. One of the greatest obstacles is the time limit. Each speaker is allowed just 15 minutes, which must include time for Introduction and questions, leaving the speaker no more than 12 minutes to present the work. Therefore, oral presentations are appropriate when the research has a limited scope with clear and concise points to make.

The best presentations make one or two limited points, loudly and clearly. You might have tested two or three closely related hypotheses, but they should all revolve around the same single point.
Do your best to develop a summary of your work that you can state in 25 words or less, preferably words that real people use. For example, imagine you are on a plane on your way to the meeting, and you tell the person sitting next to you that you are a college student on your way to present at a conference. She responds, "Oh, how interesting. What, exactly, do you study?" If you can answer that question in a short and simple statement, in a language that the woman next to you will really understand, you are half-way there.

Once you know your central message, you need to decide on supporting information. The best presentations generally follow the guidelines of a published paper, with sections like Introduction, Methods, Results, and Discussion/Conclusions/Significance. However, you will have only a couple of minutes per section, so you might have to run through that 25-words-or- less exercise for each part of the presentation. For each section, ask yourself, “What is my central message?”

Here are some guidelines:

Introduction

This section should start with your general research objectives and a few words about the context of your work. You should make a clear statement of the hypotheses or predictions that you tested. Think ahead and ask yourself, how is this connected to the **Discussion**? Does it tell your audience why you

did this experiment or research? You should strive to keep your **Methods** section brief. Don't be so brief that we can't figure out what you did, but do give some thought to what is really relevant to this particular presentation. **Results** tell what you found out. Did your tests come out the way you expected? This section will be supported by graphics of your data and statistics. This section may be shorter than you first expect, and this is ok!

The more concise and clear your results are, the more time you have to talk about their importance. And it is better to have a few results that are really important than lots of results that aren't.

Discussion and Conclusions

This is a section that is often overlooked in oral presentations. Speakers run short of time and rush through the most crucial part of the talk. Don't let this happen to you. Consider the major point that you want your audience to remember about your talk. Discuss not only what your results show but also **why** they are **SIGNIFICANT** *(significant meaning important, not statistically significant).* Demonstrate how your research relates to the larger picture or issues. Indicate why anyone should care about your findings. This will summarize your study and send the audience off on a high note.

Acknowledgements and References

It is becoming increasingly common to acknowledge sources of support and research assistance at some point in the presentation. We recommend citing just a few sources, focusing on those papers that are seminal in your field or particularly relevant to your research. We strongly recommend that you look to your mentor and colleagues for assistance. When you think you have got the content outlined, even in a rough form, try it out on your mentor, your office mate, and your parents. If they get what you are trying to say, then you're on the right track.

The first question that many students ask is how many slides to show. Some experts recommend one slide per minute, but this is probably a little slow. Speakers should certainly allow at least one minute for some slides especially the graphs of data, which need to be talked about at length – but other slides might go much faster. You might plan on about 25 slides for a 12-minute talk. You must bear in mind each presentation is different, so the best approach will depend upon the material you are presenting.

There are many ways to make your visual aids. Your presentation should be made in PowerPoint. Preparing a PowerPoint presentation can be very intimidating the first time, but with the knowledge of a few of the program's little tricks, it can be the most versatile form of presenting a talk. First, we recommend you find a friend to show you the program if you've never used it before. When you open PowerPoint, select New presentation. Choose a blank presentation rather than a premade one, because these are made for the business world and aren't great for scientific presentations. Then choose the first slide that you want (all text, text and a graphic, completely blank…). You can format the slides by choosing the Format option and choosing font, or background, etc.

Text slides can be used effectively in a variety of ways. For example, you might start your talk with a title slide, which includes your name and the title of your project. A text slide is also a good way to list those people and institutions you wish to acknowledge. Some colleagues suggest combining these two, so that your opening slide shows your title and name, and gets the acknowledgements out of the way, but be careful because you do not want too much text, even on the title slide.

Text slides can also provide visual support as you present your introductory material. For example, one slide might show "bullet statements" of your central research objectives. Another might list your specific hypotheses or test predictions. If you are going to review some of the general research context, you could provide an outline of the highlights.

You might return to text slides when you are recapping your research findings and stating their significance. Or you might want to close your presentation with that list of acknowledgments.

The key to doing text slides right is to remember "less is more" and "bigger is better." (1) Use very few words. We recommend no more than six lines of type per slide, with at most seven words per line. Try translating statements into bullet statements or an outline. Keep the wording tight; use simple language, minimal jargon terminology, and short, uncomplicated sentences. Remember that you will also be speaking to your audience and slides are visual support of what you are saying, not a substitute for your oral presentation. (2) Choose the right font. Use a typeface Arial because it is easy to read. Studies show that text written in all capital letters is hard to follow; it is better to use bold print than all caps. Use the same typeface throughout your presentation. We recommend using 1.5 spacing so that the lines are easier to follow. Then use a font that is about as large as the slide will accommodate, for example title lines size 44, major text 32, and minor text 24. (3) Choose the right color(s). We recommend using contrasting colors, light type on a dark background or vice versa, like white on cobalt blue, or dark green on a pale yellow. Avoid red type - it looks good on your computer but is virtually impossible to read off of the slide screen. And at all costs avoid bright yellow as a background, it is blinding for everyone. (4) Different colors can be used effectively to guide your audience through your text. For example, you might write the section headings ("Introduction," "Methods," "Conclusions") at the top of your text slides in yellow, and then have your bullet statements in white below these headers. However, please don't get too carried away with color. Also bear in mind that a significant proportion of your audience may be red/green colorblind, so avoid this color combination.

Graphic images can be helpful in your Introduction in the form of flow charts. If you are trying to summarize how several variables interact, then a good flow chart might be just the thing. The same might be true for your Methods section. Tables are really tricky. So many talks include a table full of tiny words and numbers that are impossible to read. This situation is hardly helped by the speaker's noting, "I know this is hard to read..." or "I don't expect you to read all of this..." Then why show it? If you must provide a table, keep it to no more than four columns and three lines - that is about as much as your audience is likely to digest. Another way of dealing with this is to

highlight the column or row you are discussing at the time in each slide. Then the next slide would circle or highlight the next data point of interest. Graphics are most important in the Results section. Effective graphs will clarify your findings at a glance. Poor graphs will leave your audience irretrievably confused. Our first recommendation is that you limit the amount of information that you put into each graph.

Try to keep it simple. Let each graph make one specific point, and plan to put just one graph on each slide. Be sure to clearly state your axes when discussing each graph. Start to plan this part of your talk by thinking about what type of graph is best for the type of data you are presenting.
Use of color: Color is very helpful in presenting your results, but use some restraint. For example, three lines of color representing different measures will be far easier to follow than three lines that are all black and differentiated only by little squares or circles. .

Photos can be used effectively throughout your presentation, not only to make your points, but also to break up the monotony of text and graphics, and to keep your audience's attention. You might use a great picture of your subjects in the Introduction of your talk, just as eye candy, while you discuss your general research objectives.

Be sure to leave the title slide up long enough for your audience to read it. Remember that the title slide puts your name in front of the audience, and that is very important. Think about a few words that you can say while that slide is up, like acknowledging support, or introducing your research objectives.

Save your presentation:

2015HIP_project no_your mentor_your name__presentation.doc

For example, HIP_15_040_Schwartz_Aller_presentation.ppt.

Provide the appropriate Distribution Statement.