

SUGGESTIONS FOR TALK PREPARATION AND PRESENTATION

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Giving effective talks about your work will be an integral part of your life as a professional scientist. The following list of suggestions is worth noting as you prepare and present talks, regardless of the venue. There are certainly additional useful points to be made — feel free to share them.

One pre-emptive noteworthy point is that, until one has prepared and presented many talks and so has become accustomed last-minute changes, it is most effective to begin preparing and practicing *well in advance* of the presentation date (2-3 weeks prior to that date) and to have all changes incorporated and practiced 2 or 3 days before the presentation date. Our experience is that early-stage students who try to make changes at the last minute do not effectively incorporate those changes into the actual presentation.

TALK PREPARATIONS.

(1) PRACTICE YOUR TALK (REPEATEDLY REPEATEDLY REPEATEDLY) OUT LOUD. There are virtually no public speakers - scientists included - who are naturally gifted at speaking to an audience without practice. The best seminars and presentations that you will hear are the result of PRACTICE PRACTICE PRACTICE. Treat your practices exactly the same as you would a full dress rehearsal for a theatre performance. DO NOT prepare a talk only by creating an outline and just thinking it through — not even if you've done this in the past and think that it works for you. Find yourself a nice quiet room and speak your talk out loud (REPEATEDLY). You will discover that you learn a lot about how and what is the right way to say something clearly (including enunciations, points of emphasis, when to pause, etc.) if you practice actually speaking it instead of just thinking about it. It will/should occupy a lot of your time at first, but eventually (over the years) you will need to practice less.

HINT: Make especially certain that you can nail the first 2 or 3 sentences of your talk. It is particularly challenging to get rolling at the start of a talk, especially for “short talks” (10-15 min duration talks), so being able to present the first few sentences without thinking about them is a great way to move into your presentation.

(2) PRACTICE USING YOUR FIGURES: This includes actually pointing to the relevant parts of each figure at the right times during your practices. You don't need to project them onto a screen to do this. Either use your computer monitor or use printouts. A handy device is to print them in “Handout” mode, which allows you to print multiple powerpoint figures per page. Printing them out 6 figures per page is handy, economical, and leaves space for you to make notes.

(3) PRACTICE IN FRONT OF AN AUDIENCE: Even an audience of one person is valuable. Have them sit in the back row, to ensure that your voice reaches that far, and that they can clearly see/read all of your projected figures from the back of the room. If you do not naturally speak in a loud voice, then practicing/giving a talk with a loud voice takes effort, and it is exhausting. However, the more you practice speaking loud, the easier it becomes, just like exercising for any other purpose. When possible, do some practices in the room in which you will give the talk. This not only enhances your comfort level but enables you to practice working the room lights and so on.

(4) MAKE THE FIGURES LARGE: Have the figures fill as much of the screen as possible. This includes figures that are entirely statements. Use the largest font size that fits. If you are preparing figures for a POSTER, format each figure so it completely fills the section of poster dedicated to that figure. If the audience (including the back row) cannot see your figures, INCLUDING the labeling, then why bother showing it? Also, use sans-serif types of fonts for labeling, such as Arial, Helvetica, Calibri, Tahoma, etc. These are less cluttered than serif fonts such as Times Roman.

(5) MULTI-PANEL FIGURES- LAYERING: It is often challenging for an audience to focus on one section of a multi-panel figure, yet it is often most useful to present a data set as a multi-panel figure. In these cases, the most effective presentation method is to build up the figure sequentially. For example, if the full figure has 4 panels, then initially present only Panel A, so you can focus the audience attention on it. Then go to the next slide, which will present Panels A + B, enabling you to discuss Panel B. And so on until all 4 panels are present.

(6) USE COLOR AND DECLARATIVE LABELING IN FIGURES:

(A) Color is a very powerful tool for **highlighting** important information. It can call the audience's **attention** to important issues that otherwise might be buried in a complicated figure or text slide.

(B) Remember to **LABEL** whatever media you're using clearly and carefully.

(C) For figure titles, **use a simple, declarative sentence** that delivers the "take-home" message: For example: Good- "Over-expression of protein X reduces neurotransmitter release" versus Not as Good- "Effect of protein X over-expression on neurotransmitter release."

(7) TO MAINTAIN IMPORTANT INFORMATION, USE INSERTS/LEGENDS: Sometimes, there are a lot of details in your presentation that are relevant to much/all of your talk, but those details are not explicitly defined on each Figure. It is often challenging for the audience to remember these details, thus degrading their level of understanding. There are two ways to cope with this problem.

FIRST, use a small "insert" or "legend" to the side on relevant figures, so that this relevant detail (e.g. pathways, acronyms, detailed relationships, etc) can remain visible for the duration of the talk, and the audience can refer to it as they need to.

SECOND, frequently present summary schematics during your presentation to keep the audience focused and to remind them of what they just learned. This is a particularly valuable mechanism for ensuring that your message is retained by the audience. Plus, repetition of important points is never wasted!

(8) POWERPOINT SPECIAL EFFECTS: Powerpoint is a very useful tool — and the animation can really enliven a presentation. However, it can also be a distraction and become really irritating. You need to ask yourself if the end result is enhanced or diminished by all of the "extras." Sound is rarely necessary and can be very distracting.

(9) ONE CAREFULLY CONSTRUCTED AND WELL-LABELED SUMMARY DIAGRAM IS WORTH A THOUSAND WORDS: Figures that consist entirely of text are often helpful, when interspersed with data. However, a summary cartoon can be more memorable. Try to combine the two approaches by finding or making a summary cartoon and using bullet points of text below it to remind you and the audience of the important issues you wish to raise, discuss and be remembered.

(10) GLOBAL CONTEXT: Each talk should BEGIN AND END with a discussion of the issues that are addressed by the presented work, including: **(A)** What are the issues? **(B)** How does the presented work address these issues and provide new insights?

There are two levels of context. These include **(a)** what the data mean in terms of advancing understanding of the system you study, and **(b)** how they contribute to enhancing our understanding of general principles/concepts common to many systems.

It is also quite valuable to provide a periodic summation of grouped data, with respect to what it has taught us, every so often during the talk itself.

At the end of your presentation: Summarize your future directions or unanswered questions AND acknowledge (a) those who assisted you in your work and (b) your funding source(s).

(11) TRANSITIONS: Do not introduce each successive figure by simply saying some version of "Next slide please" -- or saying nothing at all and simply advancing to the next figure. As a transition into the next slide, introduce each image with a sentence that explains the goal of the next piece of work and, perhaps, what you found. Then, when you are finished with that image, summarize the results. In general, **repetition helps ensure that your message gets across.** Are we repeating ourselves? Excellent!

(12) EXPLAIN/DESCRIBE ALL FIGURES (INCLUDING THE AXES OF GRAPHS AND/OR SCALE BARS!!!): ALWAYS verbally explain exactly what it is that the audience is seeing. Do not just say it is a graph of something, but explicitly describe the axes, or if it is a micrograph then tell them what is the tissue, what is the scale, what is the label, etc. Leave little potential comprehension to the efforts of the audience. You are the tour guide. Don't just say "this figure shows an increase over time in avoidance behavior in xyz transgenic." Explain what the question is, what was done, how the data are plotted, how the data are interpreted/analyzed, and what they mean. The audience will follow your voice.

(13) USE ALL OF THE FIGURES THAT YOU SHOW: Explain all figures, and all panels within each figure, or don't show them.

(14) EXPLAIN JARGON: In general, it is best to eliminate jargon. Your goal is to reach as much of the audience as possible, and an audience consists nearly always of very varied backgrounds. However, some jargon is unavoidable -- ALWAYS explain/define all jargon that you use in your talk; this includes telling the audience the full name of all acronyms (e.g. CST means the Corticospinal Tract). Never assume that everybody already knows it or that they've read your papers and it's obvious. Those who do know will not be offended, and it should not take very long to explain.

(15) PERFORMANCE ANXIETY: Even with considerable preparation and practice before the real event, it is common to retain some degree of anxiety when it is time to give your talk (even after many successful presentations across many years; trust us, we speak from personal experience). That anxiety represents the strength of your desire to do a first-rate, professional job, and it is not necessarily a bad thing. If you have effectively, and REPEATEDLY, practiced your talk and know it very very well, then the residual anxiety tends to work in your favor by providing you with an energy boost. Plus, even though you are nervous internally, your very well practiced presentation carries the day and the audience has no idea that you were so anxious.

TALK PRESENTATION.

(1) PROJECT YOUR VOICE: The natural speaking voice of many people does not project very far. If you are one of these people, then you must either make an effort to speak MUCH LOUDER than usual, or else ask in advance if a microphone is available. If the audience has trouble hearing you, then they tend to turn off and stop listening, and all of your practice does not pay off. Learning to use a microphone is a valuable skill to develop. The day will invariably come when you will need to use one for a large room, be it for lecturing or giving a research talk. You must, however, be prepared for the possibility that no microphone will be available. To this end, practice your talk with a strong voice. As we discussed above, doing so will likely be exhausting at first, but it will become easier with repetition (and it is worth the effort!).

(2) TALK TO THE AUDIENCE, DO NOT TALK TO THE SCREEN: Some people have the unfortunate habit of speaking to the figures on the screen instead of to the audience. This has several negative consequences.

FIRST, if you speak with a small voice, then your voice disappears whenever you turn your head to talk to the screen. This is a turnoff for the audience.

SECOND, the audience tends to look at the speaker during a seminar, except when a specific point about a figure on the screen is being made. It is a distraction for the audience to look at the side or back of the speaker's head instead of their speaking face. The attention of the audience can begin to wander elsewhere if the speaker is not bothering to maintain eye contact with them.

THIRD, continually make eye contact with your audience. Do not fixate on any one person, but scan the audience repeatedly while you speak. The more "personal" you make your presentation, by trying to keep in contact with everyone, the more likely they will pay attention to you.

(3) REPEAT TO THE AUDIENCE (OUT LOUD, SO EVERYONE CAN HEAR) ANY AND ALL QUESTIONS THAT YOU ARE ASKED: Commonly, only a fraction of the audience has heard a question, and the answer is usually not prefaced with a repeat of the question, leading to a private discussion instead of a general dissemination of information. **It is a valuable courtesy to repeat the question to the audience.**

ALSO, repeating the question provides you with a little time to collect your thoughts regarding how you want to answer it.

ALSO, this ensures that you understood the question correctly.

This suggestion may seem sensible and obvious, but one tends to forget to do it because one becomes so wrapped up in the presentation. To ensure its implementation, **you must PRACTICE answering questions in this appropriate manner.**

(4) ROOM LIGHTS: Be aware of the contrast level of each image you project, to ensure that the entire audience can see them clearly. Think about this when you practice your talk so you will know what you want to do for each figure when you give your presentation. Turn down the lights (or request that they be dimmed) whenever appropriate, but also remember to turn them back up again (or request that they be brightened) when appropriate. If it is not necessary to keep the lights low or off for the entire talk, then ensure that the lights are up as often as possible. The audience is more likely to remain alert with the lights up.

It is all too common for a speaker to drop the lights for one particular image, and then get too caught up in the talk so that they leave the lights low/off for the duration of the talk. **You must**

PRACTICE adjusting the room lights in advance of your presentation to ensure that you remember to do it.

(5) MICROPHONE POSTURE: When using a microphone, you need to maintain consistent contact with it. When you turn your head, you need to pivot your body such that your mouth maintains the same relationship with the microphone. If it is attached to your shirt/jacket, then turn your entire torso, not just your head, when you must turn to face the screen or another part of the room. If the microphone is attached to the podium, move your head relative to the microphone so that your mouth stays close. Guess what? This requires PRACTICE.

(6) LASER POINTER: Do not wave the laser pointer unnecessarily. Slowly circle (once) the relevant section of the figure and then hold the spot for a long moment where you want attention to be focused. Then turn it off. Same thing if you use a stick instead of a light beam.

ALSO, you can minimize laser pointer tremor by using either of the following two approaches:

(a) Stabilize your pointing hand with your other hand. **(b)** Rest your pointing hand/wrist/arm on the podium.

(7) TEXT SLIDES: One should talk to the audience, NOT read lines off a slide. Word images are useful contact points for highlighting information, but it is distracting to have a speaker read to the audience. The audience is fully capable of reading for themselves. The words on the screen should be there to back up your verbalizations, but you should speak TO the audience, not the screen, and either say directly what is on the screen (if the statements are brief) or else paraphrase them.

(8) POSTURE: Your body language helps define your level of involvement/enthusiasm/interest, and it sends this message to the audience. Do not give a talk with your hands in your pockets. Use your hands effectively or keep them out of the way (but not in your pockets).

(9) SPEAKING: As you must know, monotones are not interesting to an audience. **Modulate your voice.** Voice modulation helps keep an audience interested. If this doesn't come naturally -- PRACTICE. If you're not sure, ask faculty or a peer for some constructive input.

Use a sensible cadence. Actively pause at the end of statements. When you pause, it allows the audience to collect their thoughts and consolidate the point you just made. NOTE to rapid talkers: PRACTICE speaking slowly and clearly.

Do not trail off your voice at the end of each sentence or statement. Keep your voice strong.

Use relatively short sentences. Doing so requires PRACTICE.

(10) RELAX: You're prepared! You've practiced! Your figures are labeled! You've constructed a killer summary cartoon! Your Powerpoint presentation doesn't crash your computer!

And, the most important thing:

(11) ENJOY YOURSELF -- If you are interested, lively, and engaged by what you're presenting, this will come across, and your audience will be interested -- the essential factor in any successful presentation.