How to Give an Academic Talk, v5.2

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NB: *I wrote this essay on behalf of bored audiences everywhere, and it has been widely circulated on the Internet. As a result, I frequently receive email requesting help with presentations. Unfortunately, my students here at the University of Michigan are about all I can handle, so please seek personal assistance elsewhere.*

The Awful Academic Talk

You've seen it a hundred times.

> The speaker approaches the head of the room and sits down at the table. *(You can't see him/her through the heads in front of you.)* S/he begins to read from a paper, speaking in a soft monotone. *(You can hardly hear. Soon you're nodding off.)* Sentences are long, complex, and filled with jargon. The speaker emphasizes complicated details. *(You rapidly lose the thread of the talk.)* With five minutes left in the session, the speaker suddenly looks at his/her watch. S/he announces — in apparent surprise — that s/he'll have to omit the most important points because time is running out. S/he shuffles papers, becoming flustered and confused. *(So do you, if you're still awake.)* S/he drones on. Fifteen minutes after the scheduled end of the talk, the host reminds the speaker to finish for the third time. The speaker trails off inconclusively and asks for questions. *(Thin, polite applause finally rouses you from dreamland.)*

Why do otherwise brilliant people give such soporific talks?

For one thing, they're scared. The pattern is an understandable, if dysfunctional, reaction to stage fright. It's easier to hide behind the armor of a written paper — which you've had plenty of time to work through — than to simply stand up and talk.

But second, and much more important, it's part of academic culture — especially in the humanities and qualitative social sciences. It's embedded in our language: we say we're going to "give a paper." As a euphemism for a talk, that's an oxymoron. *Presentations are not journal articles*. They're a completely different medium of communication, and they require a different set of skills. Professors often fail to recognize this. Even more often, they fail to teach it to their graduate students.

Everybody has to confront stage fright in his or her own way. But academic culture is something we can deliberately change. This article attempts to jump-start that process with some pointers for effective public speaking.

Principles of Effective Talks

Listening is hard work. Especially at conferences, where audiences listen to many talks over many hours, *people need the speaker's help* to maintain their focus. Therefore, any effective talk must do three things:

> **(1) Communicate your arguments and evidence,**
> **(2) Persuade your audience that they are true, and**
> **(3) Engage and entertain.**

In our obsession with persuasive arguments and evidence, academics too often forget about the third item on this list. Sometimes we think it follows automatically from the first two. (It doesn't.) Sometimes we even scoff at the goal itself. Some of us seem to believe that if a talk is entertaining or easy to follow, it's probably not very deep. Even more perversely, some of us believe that if a talk is dense and difficult to follow, it must be profound and important.

These attitudes are seriously mistaken. It is impossible to communicate and persuade effectively without engaging and entertaining your audience. Keeping people interested and mentally alive — entertaining them — matters because in order to communicate your work and its value, *you need their full attention*. This is the true meaning and significance of "engagement." In an academic talk, entertainment isn't about making your audience laugh or distracting them from their troubles — it's about keeping them focused on and interested in what you have to say.

Some Rules of Thumb

No rule applies always and everywhere. But the following principles work almost all the time.

Usually Better	*Usually Worse*
Talk	**Read**
Stand	**Sit**
Move	**Stand still**
Vary the pitch of your voice	**Speak in a monotone**
Speak loudly, facing the audience	**Mumble, facing downward**
Make eye contact	**Stare at your laptop**
Focus on main points	**Get lost in details**
Use outlines, images, and charts	**Have no visual aids**
Finish within your time limit	**Run overtime**
Rehearse	**Don't practice because you're too busy working on the slides**
Summarize your main points at the beginning and end	**Start without an overview; trail off without a conclusion**
Notice your audience and respond to its needs	**Ignore audience behavior**
Emulate excellent speakers	**Emulate your advisor, even if s/he gives lousy talks**

This list really says it all, but here's a little discussion about why these principles are so important.

Talk, rather than read. Written academic language is usually quite complex — far more complex than ordinary speech. So while good academic style can make beautiful *reading*, that doesn't translate into beautiful *speaking*. Written sentences tend to be long, with many clauses and arcane vocabulary that become impossible to follow when read aloud. Also, readers can review or look ahead (which helps them deal with complexity), but listeners can't do that.

Don't read. Just talk. You'll be easier to understand, and you'll make genuine contact with your audience. Furthermore, ultimately you'll think more clearly. If you can't communicate your points by talking (without reading), how well do you really know what you want to say?

Don't read bullet points, either. Your audience will usually read your entire slide in 10 seconds, far faster than you can read it aloud. So don't insult their intelligence by reciting it to them. Instead, use the bullet points mainly as memory jogs; speak about them and from them, without ever actually reading them aloud. If you absolutely must read from a text — and as a beginner you may feel you have no other choice — make your text different from your slides.

Preparing your Talk

Hack it down to size. If you're basing your talk on a finished paper, you will have to cut large parts of it for the talk. The most common mistake in academic presentations is to try to cram everything in: *don't do it*.

100 words per minute. As a rule of thumb, most people talk at about 100 words per minute, so in a 15 minute conference talk, you can say only about 1500 words. If you were reading aloud (which you shouldn't), that would be about 6 pages of double-spaced text in 12-point font. So your first step must be to plan, very carefully, exactly what you want to say.

Make an outline. Once you have your plan, reduce it to an outline. You can put this on paper (as notes for yourself), or on slides (as bullet points), or in the notes section of your presentation software. Your outline needs just enough detail that you can remember what to say, *but no more*. An ideal outline consists of short phrases, rather than complete sentences (which will tempt you to read them aloud).

One good strategy is to go through your paper and collect a series of sentence fragments, then rearrange these until you've got what you need. The outline view in word processing software can be helpful for doing this.

Stand up. If people are sitting in rows, stand up, even if there are only a few. This lets people in the back rows see your face and hear you better. (**Rule of thumb:** if you can't see their faces, they can't see yours.) Standing also puts you in a dominant position. This sounds politically incorrect, but it's not. Remember, you're the focus. The audience *wants* you to be in charge, so go ahead and take the top-dog position, physically above their heads.

***Exception*:** seminar-style presentations around a table with only a few people (fewer than 12-15). In this situation, everyone can see you just fine, and standing up will seem too formal.

Move around. It's easier to keep focused on someone who's moving than on a motionless talking head. Hand gestures are good, too. Don't hesitate to show your enthusiasm for your topic; it's infectious.

It's possible to overdo this one, though. If you leap around like a rock star or stab the air with rap hands, you'll distract people from the content of the talk. Simply walking back and forth from one side of the room to the other every 3-4 minutes is usually enough.

Vary the pitch of your voice. Monotones are sleep-inducing. Many people don't realize they do this. Get a trusted friend or colleague to listen to your delivery and give you honest feedback. (This is an important principle in itself!) Even better, tape or videotape yourself and check out how you sound.

Speak loudly and clearly, facing the audience. Be careful, especially when using visual aids, that you continue to face the audience when you speak. Turning around to look at your own slides can lead you to speak to the screen. This breaks your eye contact with the audience and mutes your voice. Instead, train yourself to look at slides on your laptop screen (and be sure it is in front of you, not off to one side or behind you.) If you absolutely must look at the main screen, train yourself to glance at it briefly and turn immediately back to the audience.

This is one reason why simple, uncluttered slides with *minimal text* are crucial. If you have too much text, you'll have trouble keeping track of where you are in the talk.

About Vocal Technique

Public speaking is much like singing. It takes a lot of air. You're going for volume, range, and effect. You want to fill the whole room with your voice; people in the back rows must be able to hear you clearly. Make a recording of yourself speaking in a large room. Do you talk in a monotone? Do you mumble? Do you speak too fast? Do you project confidence and authority, or does every statement come out sounding like a question?

Speak from the gut, not the throat. Learn about, and practice, diaphragmatic breathing (breathing from the belly, rather than the chest). Nervousness tends to make breathing shallow and rapid, but what you need is exactly the opposite. Breathe deeply — it's necessary to generate volume, and will also help you keep your mind clear. If you don't, you can actually pass out from lack of oxygen. Really. It's happened to me.

Speak at the bottom of your vocal range, its deepest pitch. This is also your loudest and most commanding tone, and it helps establish your legitimacy and authority. (This can be especially important for women.)

Corollary: avoid uptalk. Uptalk, also called "high rising terminal," is a linguistics term for ending a sentence on a rising intonation, as American speakers of English usually do in asking a question. It's become common, especially for younger people, to use this intonation when uttering statements as well. That's perfectly fine in ordinary conversation — but if you do it in a presentation (or a job interview), it sounds like you aren't sure of yourself, or like you're asking your audience for confirmation. Instead, end statements on a downward intonation, which sounds more confident and authoritative.

Most people don't realize how quietly they speak. When you hit an adequate volume, you may feel like you're shouting. It's better to be a bit too loud than too quiet. Aim your voice at the people in the last row, not those in the front. This takes considerable practice, especially to maintain a sufficient volume throughout a talk. If sound reinforcement (a microphone) is available, it usually makes sense to use it.

Silence is a crucial element of speech. A continuous flow of sound soon becomes soporific. Stop the flow frequently by pausing briefly at the ends of sentences, or between slides. Sometimes people drone on because they fear being interrupted. Remember: during a talk people probably aren't going to interrupt you, and you're in control anyway, so you don't have to accept interruptions if they do happen.

Tip: use vocal "special effects." For example: (1) Echo key phrases. When you hit a phrase you want people to remember, "echo" it: repeat it, once, then move on. (2) Pause for a few seconds — that's longer than you may realize — at several points in your talk. This gives you a chance to sip some water, which will lubricate your throat. These long pauses will often re-awaken anyone who's tuned out.

Make eye contact with your audience. If this is anxiety-inducing for you, at least *pretend* to make eye contact. If you cast your gaze toward the back and sides of the room, people will think you're looking at someone, even if you only look at the wall just above their heads. Another technique is to locate a few friendly-seeming faces, at

different places in the room, and speak directly to them, switching frequently from one to another.

Avoid "siding." Be careful not to ignore one side of the audience. Many speakers "side" unconsciously, looking always to the left or to the right half, or only to the front or the back, of the room. Because it forces you to stand far to one side or the other, using a projector tends to amplify this effect. Moving back and forth periodically, from one side of the screen to the other, can minimize this effect.

Speakers also tend to concentrate on those who seem to be responding well (nodding, smiling, etc.). *This can be a trap.* In professional situations, it's often the people who are frowning, falling asleep, or seeming bored whom you most need to draw in. If looking at them directly makes you uneasy — and it *can* be extremely flustering — use the technique of casting your gaze just above their heads toward the back of the room.

Focus on main points. Especially in a conference situation, where talks are short and yours is just one of many, your audience is not going to remember details. In such a situation, less is more. Give them short, striking "punch lines" and/or brief stories that they'll remember. They can always read your written work later, but if you don't get them interested and show them why it's important, they won't learn enough to *want* to read it.

Provide signposts. Since listeners can't rewind or look ahead, it's important to remind them periodically of what you're doing in your talk, and where you are in it right now. At a minimum, offer an outline. Some speakers seem to think they're giving everything away if they show people what they're going to say before they've said it. Instead, the effect of a good talk outline, well presented, is exactly the opposite: it makes your audience curious to hear the details. At the same time, it helps them follow the structure of your thinking. One useful techniques is to make a simple outline slide, then copy it and re-insert it at the beginning of each talk section, with the heading of that section bolded on the slide.

Use visual aids. Images, charts, graphs, and other visual materials can dramatically improve audience understanding and engagement. Not too many: no more than 1 per minute, fewer if the material is complex (especially charts or tables that require people to read and interpret captions). Not too few, either: one image every 5 minutes isn't enough to keep a talk moving.

Don't overuse video. In the context of a 45-minute talk, even one 3-minute video clip can seem interminable. More than one can make people want to scream. Videos also break the flow, take the attention away from you, and eat up time better saved for your presentation. If you really need video for your topic, edit clips to an absolute minimum length. Less than one minute is a good goal.

Cite your sources on your slides. Today's slide presentations often become quasi-publications. As with anything in else in academia, be sure to cite your sources — especially for images. Fair use generally gives you the right to re-use such things for non-commercial purposes, so there's no reason not to cite the source. Readers should be able to find your sources later, even years later, so always include titles, names, and

especially dates — not just URLs, which change frequently. A Creative Commons license can help secure recognition for your work without limiting reuse of your slides by others.

About Presentation Software

Make slides extremely concise and visually uncluttered. Text slides should be seen as maps, not as territories. They're tracking devices that let both you and your audience follow the flow of the talk. Therefore, they must not be overfilled. 6 lines of text per slide is plenty. 9 lines is a lot.12 lines is pretty much unreadable. Bullet points should be no more than 2-6 words — and they should NOT be complete sentences.

If you need more text, use more slides. One of the beauties of software is that you can make as many slides as you want. I've seen extremely effective presentations with only one word on most slides, only one image on many others. Why cram one slide full of text when you can make two or three uncluttered slides instead?

Use images. People are visual creatures, and the old adage that a picture is worth a thousand words is especially apropos in presentations. Pictures, graphs, charts, cartoons, and other images can be extremely helpful. As with text, keep them simple and uncluttered. Also, avoid dark images that won't show up well on a screen.

Always choose white or light-colored slide backgrounds. Why? To see light text on dark slides, you'll have to turn down the lights, or even turn them off. This makes it hard to see your notes, the podium, etc. Worse, it will tend to put your audience to sleep. Really. By contrast, dark text on light-colored slides can usually be read with lights on and shades open. Don't let your host, or anyone else, manage the lighting for you. Tell them you prefer to leave the lights on. If you can see it, your audience can probably see it too. If in doubt, walk to the back of the room and check.

Keep the glitz factor low. Fades, transitions, backgrounds, sound effects, and so on can be a real pitfall. Glitzing up your presentations can turn into a serious time sink, detracting from the far more important time you spend on content. Also, they can give your audience the impression that you care more about surface than substance. Finally, they can cause breakdowns during the presentation if they don't work as you expect them to — which will be often. Nothing irritates an audience more than watching somebody fiddle frantically with a computer in the middle of a talk. So **keep everything basic**, at least until you've completely mastered the software. *Always practice the final version*.

Talk to the audience, not the screen. Everyone else is staring at the screen, so you may find yourself drawn to stare at it too. If you do this, the audience will be looking at your back, and they won't be able to hear you. Instead, have your laptop, or a paper version of your notes, in front of you. Speak from that, rather than from the slides on the screen. This takes practice, practice, and more practice.

Death by Powerpoint. PowerPoint's native bullet-list format has been so overused that it can be more of a turn-off than a facilitator. If you are confident enough, a very effective technique is to speak only from images, charts, figures, etc., with minimal text and no bullet points. Printed notes, keyed to the slides, can guide you through what you want to say. Don't make yourself a slave to the software — use it creatively!

Summarize your talk at the beginning and again at the end. "Tell 'em what you're gonna tell 'em; tell 'em; and tell 'em what you told 'em": this ancient principle still holds. Following this rule helps your audience get your main points. Even more important, it helps them *remember* what you said — which is, after all, why you're there. You can be creative about how you give such an outline; a few phrases can do the whole job, posing a puzzle or a problem you're about to solve and showing the way to the solution.

Talks need a sense of an ending. You'll develop your own style of doing this. Make it completely clear when you are concluding (show a slide headed "Conclusions"; say "to conclude..." or "to sum this up..."). Even more important, though, you need a final sentence that really *sounds* like an ending, by being spoken slowly and deliberately, with a downward intonation. Practice this before the talk. After your final sentence, say something short and simple, such as "Thank you," and then stop talking and *wait* for applause. (If you're nervous, it can be tempting to try to fill the 2 seconds of silence that often occurs at this point. Don't.)

End with the ending, not the fine print. Leave your conclusions slide on the screen when you're finished**.** If you feel you must deliver thanks to your advisors or co-authors, do it at the beginning, and be brief.

End with the ending (part 2). Don't succumb to the currently popular, but completely idiotic trend of ending with a "thank you" or "questions?" slide. Say thanks and ask for questions, by all means — but these acts don't require a slide, and since your goal is for your audience to remember your main points, your best tactic is to leave your conclusions on the screen during the question period. Everyone will read it several times, and it will guide the discussion back to where you most want it to go. With more time and multiple views, people are more likely to remember your findings. Wouldn't **you** rather read interesting conclusions for 20 minutes than stare at a slide that says "Questions?"

Finish within your time limit. Don't disrespect your audience by running overtime. *Never* go longer than 45-50 minutes — most people's maximum attention span. If you exceed this limit, you'll lose them at the crucial point, namely your conclusion. Whatever the time limit, respect it.

In conference settings, exceeding your time limit is also incredibly rude, since it cuts into other speakers' allotted time and/or the discussion period. If an ineffective panel chair fails to restrain a speaker who runs over, wait a couple of minutes, then interrupt (politely) and say something like "I'm sorry, but I'd like to be sure we have enough time for my talk as well." No one will hold that against you. Others are certainly thinking the same thing, and your intervention will be greeted (by most people) with relief.

Never draw attention to timing problems. If you do run short on time, try to avoid saying anything about it. Talking about your own timing wastes words and makes your apparent lack of preparation the main focus. Instead, just pause, gather yourself, take a deep breath and a drink of water, and make some adjustments so you can finish on time: skip slides, say less about each one, jump to the conclusion.

About Timing

Timing a talk well is among the most crucial of presentation skills. Nothing's more embarrassing, or more difficult, than getting only halfway before hitting the time limit.

Practice, practice, practice. The only way to be sure you time things right is to rehearse your talk: every word of it, *exactly as you plan to deliver it*. Timing is a complicated, learned skill that requires a lot of practice — so practice where it's easy and comfortable, i.e. at home, or with other students.

Use a timing device. Clocks and analog watches are hard to use, because if you start at (say) 4:07 you'll have to keep doing mental math to figure out how much time remains. This is surprisingly difficult when you're nervous.

Smartphone timer apps with large, bright numbers are a better alternative. However, these only work if (a) you remember to use them, (b) the numbers are large and bright enough to read easily while you're talking, and (c) you're paying attention, so you can turn off the timer before it begins to beep.

PowerPoint's "Presenter View" (Mac only) has an integrated stopwatch that starts when you open the talk. This is a great way to keep close track of your time. The problem, once again, is remembering to restart the stopwatch at the beginning of your talk.

Develop a standard slide. You can develop your sense of timing by always using the same slide format. After you've given a few different talks using the same format, a little math will tell you how many minutes it usually takes you to talk through one slide. From there, you can estimate the duration of a new talk from the number of slides.

Decide in advance what you can skip. Make an unobtrusive mark on dispensable slides, if you need to — then drop them if you run behind. If you do run short on time, always skip slides in the middle and jump to the conclusion so you can spend enough time on that. *Never* just plow ahead, trying to cram it all in. You'll only succeed in irritating your audience and forcing your host to cut you short. This can only end badly.

Tip: Say you have 20 minutes to talk. When you're rehearsing, mark your notes or slides when you hit the 5, 10, and 15 minute points, maybe also the 18-minute point. That way you won't be caught by surprise if you start to run overtime.

About improvising: until you've really mastered presenting, *never, ever* try to improvise during a talk. This doesn't mean you can't interrupt yourself to tell a joke or a story, or digress a bit from the main thread — those can be important techniques for entertaining your audience, keeping their attention, and showing your human side. It does mean that *you must rehearse those things as well, because they take time*. If you haven't practiced them, you won't have any idea how long they take (usually a lot longer than you think). Like a professional comedian or actor, you need to practice *everything* you plan to do — including things you want your audience to think you're improvising.

Notice your audience and respond to needs. If people seem to be falling asleep, or getting restless or distracted, the problem may not be you or your talk. Is the room too hot or too cold? Is it too dark, or too noisy? Can people see you? Is the microphone not working? Is something outside the room distracting people? Don't hesitate to stop talking in order to solve these problems.

Alternatively, you may need to speak louder, or you may have gone on too long. Whatever the case, notice what's happening and use it as feedback. If you can't figure out why your audience is responding poorly, ask somebody later and fix the problem next time.

If you're not sure whether people can see or hear, ask someone in the back row directly whether they can hear you. This is also a good technique for setting up initial communication with your audience. It makes listeners feel included, and puts you in touch with them as human beings.

Handling Questions

As with everything else, spending some time anticipating likely questions and preparing your answers can reduce your anxiety and improve your performance. Practicing with a live audience and encouraging them to ask questions is the best way to do this.

Get help from the audience. Sometimes you find a question incomprehensible, either because it is poorly expressed or because the speaker's English (or your own) isn't that great. In cases like these, don't hesitate to say "I'm not sure I understand the question. Can someone help me?" This gives other audience members permission to translate; usually someone will be able to repeat or reformulate the question.

Hold something in reserve. Most talks are based on articles, book chapters, etc. Instead of trying to cram everything from the written piece into your talk — which is probably impossible anyway — hold back some of the interesting secondary points, data, or details. This strategy ensure that you'll still have something to say after the formal talk ends. Sometimes I will end the formal talk with a black slide, but leave several more slides waiting behind it for things I want to talk about that I couldn't fit in. "Glad you asked! That reminds me that I wanted to say something about..."

Divert difficult questions. Obviously, you should try to answer all questions on their own terms if you can. But what do you do if you get stumped? My own belief is that if you don't know the answer to a question, you should say so — but if that's *all* you do, your response will be seen as a failure. Instead, say something like this: "That's a very interesting question. I'm not sure I have a good answer right now, but your question reminds me that I wanted to say a few words about X...." Then fill in the "X" with one of the points you've held back — ideally, of course, one that connects to the question somehow.

Tip: **Taking charge of the talk environment is part of your job as a speaker.** *Never* let others control room conditions in ways not to your liking. For example, "helpful" audience members sometimes react to the use of a projector by jumping up to turn off lights and close window shades. Unless this is truly necessary, avoid it at all costs, *especially* at conferences, which often take place in exceedingly dim hotel meeting rooms. The lower the light, the more likely your audience is to fall asleep.

Keep control of the talk situation. Sometimes people will interrupt you during your talk. If it's just a clarifying question and it's short, fine — answer it and move on. But much more time-consuming and flustering situations can occur. Some groups and/or individuals have reputations as difficult audiences; some academic cultures (e.g. economics) encourage critical comments in the middle of talks, as a test for the speaker. Try to find out in advance what the audience will be like. If you know about such issues, you can prepare.

Most difficult of all is when somebody jumps in repeatedly with long, angry-sounding comments or contentious arguments in the middle of your talk. This can be extremely disturbing, especially for grad students at the bottom of the professional hierarchy. *Anticipate this* and plan a strategy for maintaining control. Unlike soccer games, talk periods don't get extended to make up for time-outs. You can't afford to spend five or ten minutes on a digression in the middle of your presentation, because you won't get that time back.

The best techniques I've found are the following. First, if interruptions are becoming a problem, cast a glance at whomever is chairing the conference session, or your sponsor at a job talk. If you're lucky, that person will intervene on your behalf. Second, you can wait politely until the outburst stops, then say as calmly as possible something like: "Thank you for your comment. I'd like to respond, but if you don't mind I'll hold that for the question period."

Your last alternative takes nerves of steel, but sometimes there's no other choice. Your tormentor seems determined to drone on for ten minutes and nobody seems willing to stop him/her. This is when you need to say loudly but firmly, as authoritatively as you can: "Sir (or madam), please allow me to finish my talk." Pause for a long beat, then simply proceed and ignore further interruptions from that person. Remember, probably everyone in the audience is feeling your pain and wishing for a graceful way out of the situation. If you can muster the courage to shut the heckler down, others will pile on, and you'll be saved.

Test everything, including the room. Some rooms present speakers with uncomfortable or unusual situations, such as steeply raked seating that makes you feel like you're in a pit, or a podium that is 30 feet away from the front row of seats. Show up at the talk site at least 15 minutes early — 30 minutes if possible — to check equipment, mount and test your slides, scope out the room, and get comfortable in the setting. Walk around, talk out loud, and spend a little time imagining yourself giving the talk. Try to

anticipate how it will feel and how you might need to adjust your performance to fit the situation.

Get 15 minutes of quiet time before the talk. A good host will plan for you to have at least 30 minutes alone immediately before your talk, during which you can set up, get familiar with the room, and review your notes or slides. If a break is not on your schedule, tell your host that you really need one and ask to have your schedule revised. It's best to take the 15 minutes before your talk in a different room, so that arriving audience members won't blow your concentration. Sometimes a host will hang around and keep talking to you while you're trying to gather yourself and review your notes; if this happens, ask politely but directly for a few minutes alone. During your quiet time, remember to breathe. You're going to need well-oxygenated blood when you stand up to face the audience.

Murphy's Law applies directly to *you:* plan for disaster

Computers, networks, and projectors introduce many possible points of failure into presentations. So Murphy's Law — "whatever can go wrong, will go wrong" — applies in spades, and it applies directly to you. Something can, and very often does, go wrong with the computer, the projector, the software, the connector cables, the local network, the Internet connection, your thumb drive, or your presentation itself. Never assume that what works on a PC will work on a Mac, or vice versa. You also can't assume your host will have the same version of Powerpoint (or Keynote, etc.) that you do. Inquire in advance.

Be prepared to use your own computer. I always prefer to project from my own machine, because I know its quirks and I know exactly how to connect it. You may prefer to use your host's — but bring your own and be prepared to use it, just in case. Be sure you have any necessary dongles.

Bring backup. Badness can always happen. My hard disk drive once crashed — permanently — on slide number 3 of a one-hour talk. This kind of thing not only *can* happen to you, it *will* happen to you; the question isn't whether, but when. So: if you use a computer, **always bring backup**. That's **backup, backup, backup.** Begin making backups several days before the talk, if not sooner. Use a USB thumb drive. Dropbox and other cloud storage is also good — but network backup isn't entirely reliable (that can break too!) On the day of the talk, keep the thumb drive in a pocket or hang it around your neck. That way, even if somebody steals your bag or your laptop, you've still got the backup.

Bring printed notes. If the projector commits suicide in the middle of your talk, you'll have no time at all to fix it. None. So: *always be prepared to deliver your talk without any slides* as a last resort. This is where you will really be glad you brought printed notes. Speaking without slides is one thing, but speaking with no notes at all is a skill only the greatest presenters ever master.

Emulate excellent speakers. The very best way to become an excellent speaker yourself is to watch really good, experienced speakers and model your talks on theirs. I'm sure your advisor is a great thinker or scientist. Sadly, this does not necessarily translate automatically into great public speaking. Academia is crawling with lousy speakers, so you may have to look hard to find a truly great role model.

When you do find role models, notice not just what they say, but what they *do:* how they move, how they use their voices, how they look at the audience, how they handle timing and questions. (**Caution:** it's important to find someone in your own field to emulate. Great political speaking styles, television-personality styles, etc. don't usually work well in academic settings. Respect the speaking conventions of your own social world.)

If you find an excellent model and work hard to emulate that person, you can't go wrong. Your own style will come in time.

Final words:

Practice everything. Test everything. Keep control of the situation. Plan for disaster. But above all, be yourself — your audience is there to hear *you*.