

HOW TO GIVE GOOD PRESENTATIONS

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DANIEL JACOB (AUTHOR OF YOUR TEXTBOOK)

Don't use this as a model: avoid bulleted lists, use graphics, avoid Microsoft templates

WHY DO WE GIVE (OR LISTEN TO) TALKS?

- To communicate unpublished research. This is important for the speaker (publicizing new work, getting feedback) and for the audience (getting access to the latest). Except in rare circumstances, talks should emphasize unpublished material
- Exposure outside of our specialized area(s) – benefits both the speaker (broader impact) and the audience (continuing education)
- To get to know other scientists, to get noticed – for most senior scientists, presentations are the main source of information.
- To commune as scientists – the weekly seminar, annual conference are rituals.
- Know your goals! What is best possible outcome for you when/after you give this talk?

Communicate What You Want the Audience to Know!

1. Tell them what you are going to tell them
2. Tell them
3. Tell them what you told them

*think about how much you can legitimately take away from a talk, even when you are really, really interested.

*you may think you are repeating yourself too much, but probably not!

Talk Structure

- **Background (needed to varying degrees)** – information that puts “what you are going to tell them” in context
- **Motivation** – why “what are you are telling them” is critical and important
- **Research slides** – “what you are telling them” should be understandable and engaging for all audience members who’ve followed your background slides. Focus on the important, broad-interest results – more arcane results can be mentioned in passing and without slides (audience does not expect to understand everything you SAY, but is distressed if it doesn’t understand everything it SEES).
- **How many slides?** ~1 min/slide + time for questions. **Never go over your allotted time** and never rush through your final slides because you’re running out of time – throw away material on the fly instead. Know in advance what material can be jettisoned. People are never mad if you end early!
- **Conclusion** – “what you told them”

Background slides

- Background slides are the most important part of your talk (except AGU) - they motivate your research and place it in context. Daniel Jacob typically spends ~80% of talk preparation on background slides.
 - Background slides must be tailor-made for audience
 - Much of the audience is there primarily because they want to be educated in your field and get the thrill of research – background material should be pedagogical but research-oriented - expose the major gaps that motivate your research. You set the stage for YOUR research.
 - Slides should be attractive and informative – a fraction of the audience will be lost after your background, but you want them to have learned something

Research Slides

- Think of the take-home messages you want for your audience on each slide – make sure they get them (some repetition OK).
- Your research slides should be accessible to the lowest common denominator of your audience, if they survived through your background slides. The slide title (and subtitle if appropriate) should say what the slide is about in a way that talks to the general audience. The slide should have the punchline (take-home message) written on it.
- Don't show all the gory details of your work – if you have postage-stamp plots in your paper, just show a few panels. Make sure axes and curves are properly labeled, in large fonts, and that variables are defined. A plot in a paper often has to be cleaned up for presentation.
- If one of your colleagues is kind enough to share a slide, figure, etc. with you....don't "throw them under the bus" by complaining about it. Own your slides! If you don't like the figure make it better! Don't be a baby.

What is the audience's expectation?

Short informal presentation (5 min): describe what you're doing and give ONE result

Know level and interest of your audience. Don't cram in too much.

AGU/EGU talk (15 min): describe a journal paper submitted or in preparation.

Walk through the paper. Published work is taboo. View audience as readership of your paper; assume familiarity with topic, keep background to minimum

Talk at scientific meeting (15-30 min): present unpublished research to wider audience

Focus on unpublished research, but include more background material to accommodate diversity of audience

Workshop presentation: directed to a specific, collective task

Target objectives of your session. Use results old and new, yours and others', as appropriate. Hammer on your take-home points - make a contribution to the workshop. Still take the opportunity to advertise your work!

Research seminar (~1 h): broad audience looks for education spiced up by latest research.

Pitch your talk at lowest common denominator (university seminar: 1st year grad student in another field of the department). Make them appreciate the importance of what you're doing to the point where they can understand your research. Assume that your lowest common denominator is very smart so that you can move quickly through the background, and keep the background focused as lead-in to your research.

Celebration talk: recognize importance of ritual

Target the occasion of the celebration; keep presentation broad and light.

Know Your Audience (as individuals too)!

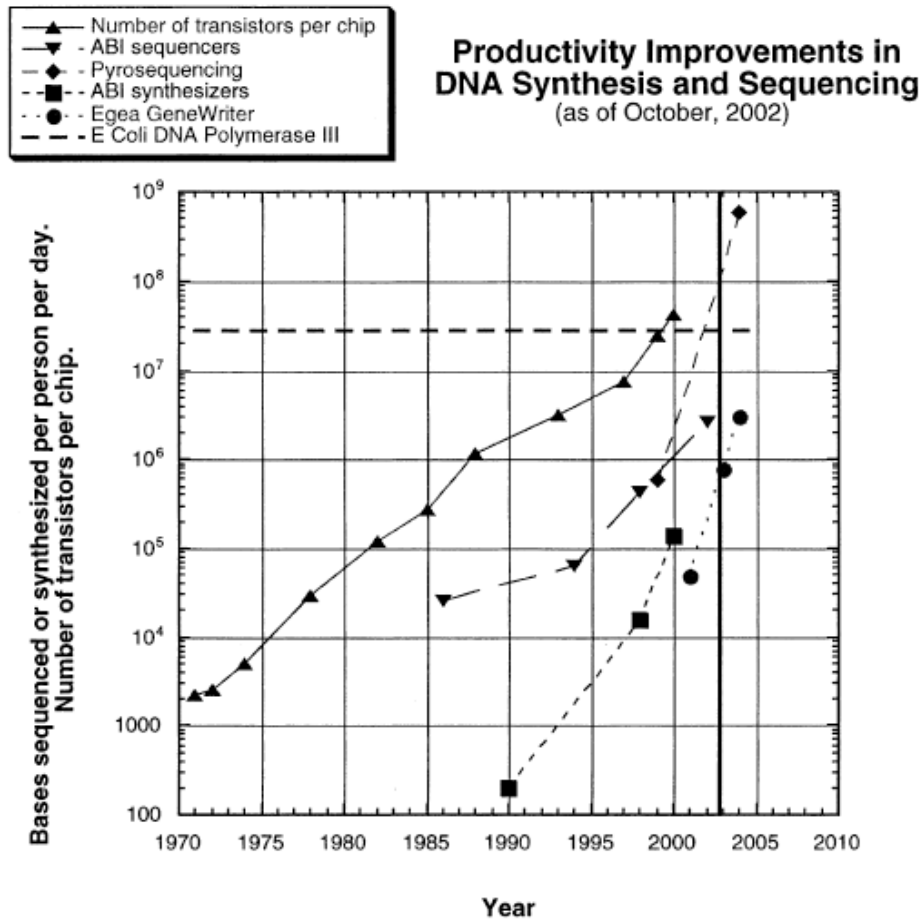
1. Super Nerds
2. The Lost
3. Temporary Slackers*

*Temporary slackers are super nerds who weren't paying attention to your last slide, but feel a strong need to understand and reorient quickly.

Reach out for your whole audience

1. Ideally, your slides will reach all three audience types. Keep in mind:
 1. What do they know?
 2. What don't they know?
 3. What do they want?

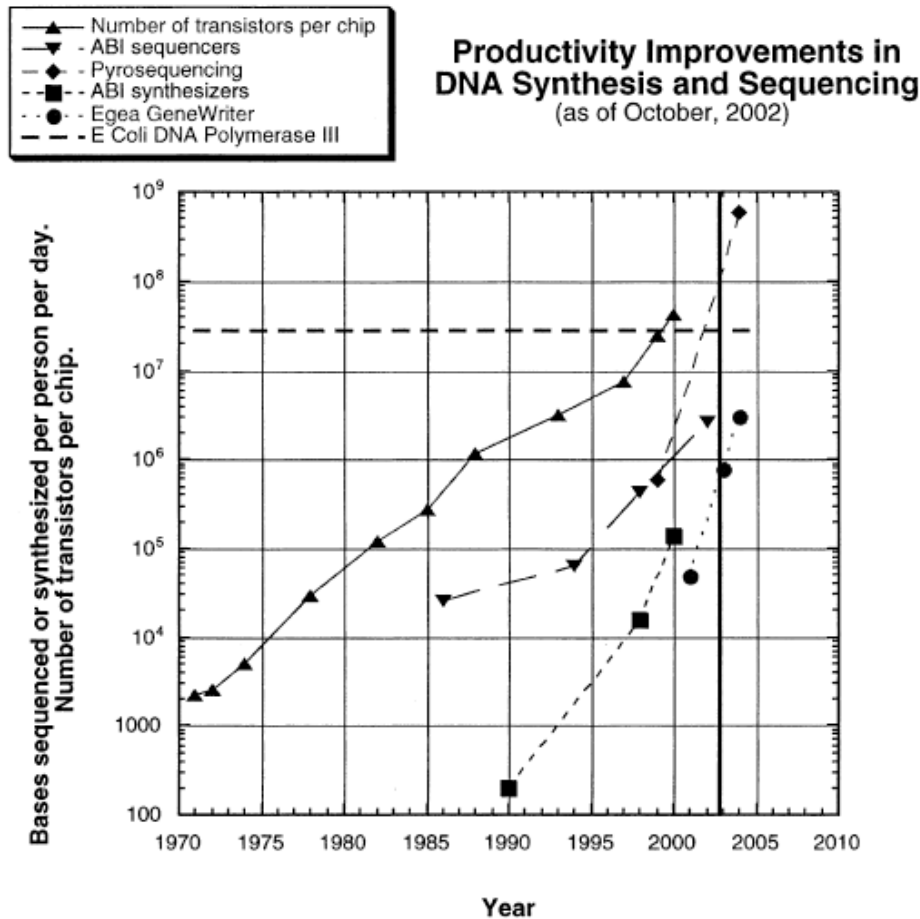
DNA synthesis technology is improving exponentially



Super nerds
will get it

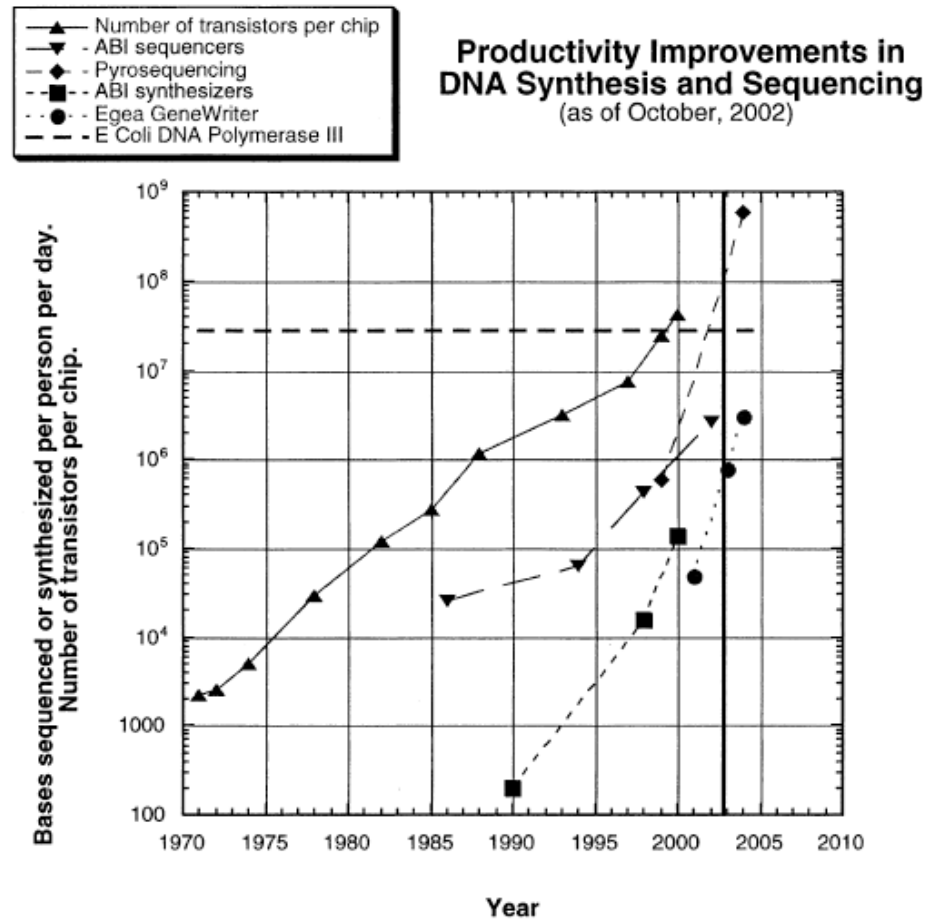
Carlson, Pace & Proliferation of Biological Technologies,
Biosec. & Bioterror. 1(3):1 (2003)

Ability to build DNA from scratch improving exponentially



Carlson, Pace & Proliferation of Biological Technologies,
Biosec. & Bioterror. 1(3):1 (2003)

Ability to build DNA from scratch improving faster than computers



Carlson, Pace & Proliferation of Biological Technologies,
Biosec. & Bioterror. 1(3):1 (2003)

Slide Cosmetics

- Include graphics! And not the cheap Microsoft graphics – spend some time looking for good ones. Your colleagues' great slides, Google Images...
- Make the text as big as possible so that it fits but looks ridiculous maybe...then back off a bit. 18 pt or greater. Times Roman font doesn't look good on slides.
- All figures should have axes labeled, lines identified, variables defined, source acknowledged. If showing comparison of model results to research observations, make sure to mention who took the measurements-especially if they are in the audience (duh!).
- Use a plain background to avoid distracting the audience and allow more room for content. Avoid cheesy templates.
- Animation schemes, successive uncovering of text may be effective but don't overdo it – audience may resent the game of cat and mouse, and it makes your slides less handy for others to use. Avoid distracting your audience with needless animation schemes.
- Consider showing a short movie if your topic warrants it – everyone likes movies. A bit of blackboard work in the middle can also be an effective break – but make sure you know what you're doing.



AVOID YELLOW TEXT



Unreadable tiny text is not worth presenting

KNOW YOUR TOPIC!

- Understand EVERYTHING you present –Scientists can see right through you when you don't.
- Agonize over your slides and arguments as you prepare for your talk – think of what questions you could be getting. Often that will make you understand something new and important about your work.
- Be deep in your knowledge– give the audience the feeling that “*this is only the tip of what I know*”. Show scholarship.
- Achieve depth through hard work (aha! – that’s how it’s done!). For grad students, depth is more important than breadth (a Ph.D. is about depth). Cordon off a topic that’s your own and be uncompromising in knowing absolutely all there is to know about it along with the underlying fundamentals. Rely on courses and seminars to build some breadth. Breadth will be important later in your career.

ATTITUDE AND BODY LANGUAGE

- Look your audience in the eyes – don't look at your slides (you shouldn't need to). And don't just look at the big shots – scan the room.
- Smile – it relaxes the audience. A bit of humor is always appreciated.
- Don't be a statue. But don't flail your arms aimlessly either. Don't make the laser pointer dance on the screen.
- Some people like to ask questions during the talk, and sometimes that's expected – but make sure these questions don't compromise your ability to finish your talk in due time. If they do, be polite but firm about moving on.
- Take some time before the talk to set up, test your slides. Stay cool if equipment malfunctions – it's not your fault. If it happens, politely ask the chair or your host to deal with it – no one expects you to fix a bulb, or a mike, or a light, etc. And then go on anyway if you possibly can – your audience will sympathize and admire you for doing the best possible under lousy circumstances.

Questions

- ❑ Questions are an important part of the talk. They can provide you valuable feedback – so leave time!
- ❑ Being able to properly deal with questions is of course a good reason to know your topic cold. It's difficult to deal with an unexpected question while on your feet – that's why you should try to anticipate possible questions during your preparation.
- ❑ Don't deliver a hesitant response to an unexpected question – better to say cheerfully that this is a very interesting point that you'll need to investigate, or that this is outside of your area
- ❑ Your response should not be to the questioner but to the audience. If you think the audience didn't understand the question, repeat it or clarify.
- ❑ Keep answers to questions brief - allows time for more questions
- ❑ Thank the questioners – “this is a really good question” – “thanks for asking that question – how much am I paying you?”

STAGE FRIGHT

- Know at least the first few minutes of your talk by heart to get over the butterflies and set the right tone.
- Know your audience – introduce yourself to people before talk, shake some hands, A familiar audience is less scary than an anonymous one.
- Get it in your head before you stand up to speak that what you have to say is of considerable value to your audience. Concentrate.
- Begin by thanking your hosts or your chair. Say hello to the audience, thank them for being here, express your pleasure at this opportunity. Show a positive attitude. Over the course of your talk, make a note to acknowledge specific people in the audience for their contributions to the subject at hand– they will appreciate it and be on your side.
 - Daniel Jacob: *“It is impossible to exaggerate in the flattery of one’s peers”*
- Flow of adrenaline is a positive force – if you have NO stage fright that’s a problem! Before your talk, blank out other thoughts and tell yourself that your talk carries a very important message and you can’t afford to flub it. That should get your heart pumping.

AND FINALLY...HOW TO BE AN EFFECTIVE AUDIENCE

- A successful talk is dynamic between the speaker and the audience; a lousy audience is just as bad as a lousy speaker
- Be engaged in the talk. You're not watching TV; you're at work. Sit up front. Concentrate. Don't tune out.
- Think of how the material presented challenges what you know. Try to mentally poke holes into what's being presented. That keeps you on your toes, is good for critical thinking, and will generate questions for the speaker.
- **ASK QUESTIONS!** Questions are part of the ritual. Don't be a wall flower. Have a question ready for the end of the talk. If you don't get to ask it during the question session, go see the speaker after the talk. Take the opportunity to thank him/her for the talk.
- Don't have an open laptop during a talk because it's rude (except in a very large meeting when you're not necessarily expected to be engaged in all talks).
- There's nothing that helps a speaker more than to see you nodding your head in approval!

Summary

- Know your audience!
 - ▣ Know your audience, know your audience, know your audience
- Prepare!
- Practice!
- Actively take notes about what you like, or what was successful in a talk you just saw...use that as a model.
- Thank the people who helped you!
 - ▣ Daniel Jacob, Drew Endy